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FRED'K A. CASTLE, M.D., - - EDITOR.
CHARLES RICE, PH.D., - ASSOCIATE EDITOR.

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## EDITORIAL.

DR. ROBERT T. EDES, of Boston, Professor of Materia Medica and Therapeutics in Harvard University, lately read a paper before a local medical society on "The Relations of Drug Manufacturers to the Progress of Therapeutics," in the course of which he indulges in a style of composition calculated to entertain an audience, although his facts and arguments are not all of a sort which bear very close scrutiny. What we wish chiefly to direct attention to, among the several matters upon which he writes, is the apparent want of appreciation, by Dr. Edes and the members of the Massachusetts Medical Society which he represents, of the true nature and uses of the Pharmacopœia; and we will venture here, to express a doubt whether most of them ever saw a copy of that work and gave its contents an hour's careful study.

As an evidence of what Dr. Edes has to offer in the way of suggestion on the subject of pharmacopœial revision, we will quote as follows:

"The three solanaceæ—belladonna, hyoscyamus, and stramonium—might be practically represented by the alkaloid atropia. . . . As regards the multiplication of *preparations*, it is a matter chiefly of convenience in prescribing. If one has in his pocket one vial of morphia and another of sulphate of atropia, he has all that is essential in thirty-two officinal preparations.

Let us now see what the preparations are which he would have us condense into two pocket vials, one containing a single alkaloid of opium, and the other, one of the most potent remedies of our pharmacopœia, in an undiluted form:

Vinegar of opium, camphorated tincture of opium, pill of opium, compound soap pill, Dover's powder, suppository of morphia, suppository of opium, suppository of lead and opium, tincture of opium, acetated tincture of opium, deodorated tincture of opium, troche of licorice and opium, troche of morphia and ipecac, wine of opium, morphia, acetate of morphia, muriate of morphia, sulphate of morphia.

Alcoholic extract of belladonna, atropia, sulphate of atropia, belladonna plaster, suppository of belladonna, tincture of belladonna, ointment of belladonna.

Extract of hyoscyamus, alcoholic extract of hyoscyamus, fluid extract of hyoscyamus, tincture of hyoscyamus.

Extract of stramonium leaves, extract of stramonium seeds, tincture of stramonium, ointment of stramonium.

This list includes one preparation more than Dr. Edes' total. Now we shall be pleased to have him indicate what one of them can be dispensed with, that would not at once be made, under some other name perhaps, by the manufacturing pharmacists of whom Dr. Edes professes such a poor opinion.

The object of the Pharmacopœia is to offer definite and carefully considered standards and processes for all drugs and Galenical preparations, which are likely to be employed in the practice of physicians; and just so far as it fails to meet this demand, does it encourage manufacturing pharmacists to make and sell preparations peculiar to themselves. The fact of the matter is, that most physicians, like Dr. Edes, ignore the fact that pharmacopœial revision can only be effective when they co-operate with pharmacists in agreeing upon such standards; and, therefore, pharmacopœial revision has been left to a few who have become more noted for an obstinate adherence to by-gone customs than for an appreciation of present needs.

We venture to say, also, that *professors* of materia medica and therapeutics are far more common than *teachers* of these branches, and that much of the present lack of knowledge among younger physicians of the properties of remedies and the nature of Galenical preparations is more largely due to the shortcomings of the former class than to the labors of manufacturing pharmacists.

When a person holding Dr. Edes' position offers us such opinions as are contained in his paper upon the relative value of the Solanaceæ; the culpability of manufacturing pharmacists; the qualifications of medical editors; the merits of the Polk-Percy controversy, and the requirements of a Pharmacopœia, he must excuse our presumption if we express an opinion that he *professes* more intelligence than he possesses.

## MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

### The Cork-Tree.

THE following description of the cork-oak is taken from a more extended paper on the subject published in the recent report of the Department of Agriculture for 1879. It is based upon a pamphlet by a Spanish engineer of forestry,* which also gives an account of the manufacture of bottle-corks in Spain. The report of the Agricultural Department contains many details relating to the cultivation of the cork-tree which are here omitted.

The cork-tree (*Quercus Suber* Linn.) is of various sizes, and this has given rise to differences of opinion with respect to the greatest height and circumference or diameter it attains. According to Mr. H. Laure, some have grown to the height of fifty feet, and he has seen trees of three feet in diameter in the neighborhood of Bormes. Mr. F. Joubert de Passa fixes the maximum height at sixty feet, with a diameter of four feet. In Algeria, cork-trees sixty-five feet high and from ten and a half to sixteen feet in circumference have been found.

In Estremadura there are some trees as large as those found in Algeria. There is a tradition that in the valley of Batuecas (Salamanca) there was a large cork-tree, the hollow trunk of which was used as a cell by some of the monks of a neighboring monastery. In 1862, in a cork plantation called *Monte Mayor*, in the province of Castellon de la Plana, cork was taken from a tree fifty feet high by ten feet in circumference. This tree was sixty years old. In the province of Gerona, the author has seen trees of a greater diameter than any mentioned above, excepting that of the valley of Batuecas, the size of which is not known.

The tree attains a great age, and its growth continues from one hundred and fifty to two hundred years. It lives after it ceases to grow, but the yield of cork is diminished.

Extensive plantations of cork-trees are found throughout the greater portion of the countries lying along the Mediterranean, as far north as the forty-fifth degree of latitude; beyond that line they do not flourish, and are sparse and of little value. Its polar line coincides with the isotherm +13.5°.

Cork-tree requires a warm, or at least a temperate climate. It is found in Spain at an altitude of one thousand six hundred feet; at the same height in France, according to some authorities, and at two thousand six hundred feet according to others. In Algeria, it grows at an elevation of three thousand two hundred feet. The minimum average annual temperature which it can stand appears to be +13°.* A southern exposure is most favorable to its growth, although it does well in other situations when all other conditions are propitious.

The free circulation of air and an abundance of light are highly beneficial to the development of this tree, which prefers, therefore, slopes to plains, particularly if they are near the sea or immediately on the coast.

According to Antonin Bouset, the cork-tree can resist differences of temperature of fifty degrees.

According to Mr. H. Laure, the cork-tree only grows spontaneously, or in a wild state in granitic or slaty formations. Experts in the province of Gerona affirm that the trees which yield the best cork are found on slaty lands.

The blossoms make their appearance in April or May, and the fruit ripens in the following months of September and January. Hence the different kinds of acorns, according to the time of ripening. Those which arrive at maturity in September, and sometimes about the beginning of October, are called *Brevas, Primerizas de San Miguel* or *Migueleñas;* those which ripen in October and November are called *Segunderas* or *Medianas de San Martin* or *Martineñas;* and lastly, the acorns which do not ripen until December or January, are known as *Tardias* or *Palomeras.*

The acorns of this species of oak are more bitter and of an inferior quality to those of the *Quercus Ilex* L., and are not so good as food for swine.

The trees begin to bear acorns within twelve or fifteen years, but until they reach thirty or forty, the acorns are not fertile, nor is the yield abundant. It is said that the tree bears fertile seeds when it yields cork sufficiently good to make bottle-stoppers. Close growth or lack of light diminishes the yield of acorns, and also impairs the quality of the cork and bark, and lessens their quantity.

The acorns, although not very delicate, lose their germinative faculty even when not on the trees, if exposed to a great degree of cold.

Some varieties or sub-varieties of the cork-oak produce very sweet acorns, as sweet or even sweeter than the *Quercus Ilex.* It has also been observed that the trees which yield small oblong or round and bitter acorns produce coarse cork, and those which bear large and sweet acorns produce a finer article, and their trunks are of a more regular shape. These characteristics are, however, not generally to be relied on as indicative of the peculiarities mentioned.

* El Alcornoque y La Industria Taponera, por Don Primitivo Artigas y Teixidor, Ingeniero de Montes. Madrid, 1875.

* The author does not say whether this temperature is according to the Réaumur or the Centigrade system. If the Réaumur is meant, it is equal to 61.25° Fahrenheit; if Centigrade, 55.2° Fahrenheit. It is almost safe to assume that the Centigrade is meant.

The operation of taking off the cork, although it inflicts a real disease on the tree, facilitates, nevertheless, the development of the trunk, and the production of the coats of cork. The cork should be taken off when the sap is running. Mr. Lambert is in favor of having this work performed in the spring, because at that time, in addition to the fact that the cork is removed with greater ease than in the depth of summer, the new formation of the cork which is not yet matured, and which is useless for manufacturing purposes, is not removed. The inner bark also is not so liable to dry up and separate from the tree. Some cork growers, however, prefer to take off the cork during the months of July and August, when the sap is descending. Along the

Cork Gatherers at Work.

coast in the province of Gerona, this work is generally done about the last of June to the first of July, the operation being begun when the cork readily separates from the tree.

The greatest risk in taking off the cork in the spring is, perhaps, in the danger of tearing away part of the inner bark in addition to the further danger incurred from late frosts which might kill the tree. It should be so arranged, therefore, if possible, that the newly stripped cork trees, which are then covered with an abundant exudation of sap, should not be exposed to sudden changes of temperature, particularly to the cold winds which follow the autumn rains.

The trees should be stripped for the first time when the outer covering can be taken off without injuring them. In the province of Gerona, this is done when the trees are from two to four inches in diameter. This rule is not strictly adhered to, however, and it is not rare to see even smaller trees denuded of their covering. The first and sometimes the second coats of cork are of no value to make stoppers.

After the trees arrive at maturity, that is to say, when they begin to yield cork of mercantile value, it is of great importance to determine the proper period that should be allowed to elapse between the harvests. In the province of Gerona, the majority of the growers strip their trees every ten years, while some do so every twelve years. Cases are mentioned where the cork was permitted to grow for eighteen years, and then gave a handsome return to the grower. As cork sufficiently thick to make champagne-stoppers is worth more than any other, growers endeavor to produce this quality sometimes by putting off the time of gathering for one or two years.

The time necessary for the production of good cork varies according to the condition of the soil and climate, and experience is the best guide in determining when it should be gathered. When mature and fit for removal, the body of the cork is of a rose-white, which color rapidly disappears upon exposure to the air. To remove the cork from the tree, an ax, the helve of which is wedge-shaped at the end, is used. Two circular cuts are made, one at the foot of the trunk and one at the proper height above. A longitudinal cut is then made, and after its edges are gently beaten with the ax, the end of the helve is introduced and the whole piece is easily taken off. Sometimes several circular incisions are made, and the cork is taken off in sections. After the cork is removed, two longitudinal incisions, which penetrate to the inner bark, are made in the trunk along its whole length. This is done to prevent the new formation of cork from cracking on its outer surface. Some persons make as many as four of these incisions in the trunks of the trees. They should not, however, be made on the north side. The inner part of the cork consists of a yellow substance which is useless in the manufacture of stoppers. It is composed of dried sap, or at least of a corky substance in process of formation, and is distributed equally over the surface of the trunk. This substance dries quickly, and serves as a protection to the mother or inner bark. This corky substance is precisely that which is taken off and lost when the cork is removed later in season, when the sap is descending.

If all the cork is taken from the tree at once, the new cork is produced more slowly, but it is of a better quality than when the tree is only partially stripped. As it has been considered dangerous, to a certain extent, to deprive the trees of their whole covering at once, it has been proposed that the operation should be performed at different times; the first year taking off the cork up to a height of about twelve inches; the fourth or fifth year up to the branches; and the seventh or eighth year from the branches themselves. By this method the trees may not suffer so much from atmospheric influences. On the other hand, however, it has the inconvenience of always leaving a portion of the delicate surface of the trunk exposed to the vicissitudes of the weather. In the plantation of *Monte Mayor*, in the province of Castellon de la Plana, it is, or at least was, the custom to take cork from half the trunk the first year; two years later it was taken off as far up as the branches; and two years after from the branches themselves.

It is not expedient to remove the first cork all at once, but at intervals of two or three years. In this way the trunk acquires a greater diameter, and the tree is not so liable to be injured by the cold. The trunk should be stripped to the ground, because if a belt of cork should be left, it would serve as a cover for ants, which would fill it with holes, or for other insects, which would cause the same or greater damage.

If the trunk is stripped every eight or nine years, the thick branches should be stripped every ten or twelve years, and the lesser ones every sixteen or twenty.

In the province of Gerona it is very generally the practice to take the cork from the trunk only, as it is thought by this means that a better quality of cork is obtained the next time.

When the cork is all removed from the trees, it is taken from the temporary places of deposit and piled up to dry slowly, and in two months loses one-fifth of its weight. Here it is inspected by the manufacturers who buy it on the ground.

If the cork-trees are not stripped, the cork splits and becomes full of holes, and is worthless for making stoppers. In about 50 or 60 years, the surface, exposed to the atmospheric influences, begins to decompose slowly, and the cork falls off in small pieces, in the same way as the bark of other trees. It never falls off in large slabs, nor does it naturally come off when the tree is alive, as some persons have supposed, presenting the cork-tree as an exceptional in-

stance of physiological action, brought on by natural agencies on the bark of this species only.

When it is intended to improve a cork plantation which has never been stripped, the stripping should be done at once, in order to obtain, eight or ten years later, an article that can be used in making stoppers. The first stripping is useless for this purpose.

In Estremadura cork is worth from $1.40 to $2.00 (7 to 10 pesetas) per hundred pounds. In Catalonia a higher price is paid. It is sold there in slabs at so much per dozen. These slabs are about 8 palms square, and bring from $2.40 to $4.00 (12 to 20 pesetas) per dozen.

To-day, cork is worth eleven times more than it was in 1790.

In 1843, in the department of Var (France), cork plantations were estimated to be worth 500 francs per hectare (2.47 acres). The net return per hectare each ten years was 600 francs, or 12 per cent per annum. At the same date oak forests only yielded 3 per cent per annum.

To-day, the value of cork plantations varies considerably, according to the locality, the age of the trees, the density of growth, and the quality of the cork produced. But as the demand for stoppers increases every day, the cork plantations acquire an additional value. Large sums are invested in this kind of property, and several Catalonian stock companies have rented large plantations in Estremadura, Andalusia, and other places, and are making handsome profits out of them. In a plantation in Estremadura the first stripping was let for $200; the second brought $5,000; and the third $10,000.

The mother-bark of the cork tree contains a large amount of tannin, as much as the best oak bark. It is extensively used by the tanners of Cadiz. Cork-trees grown for tan-bark are usually stripped every thirty years, at which age they are entirely denuded of their inner bark and cork. This kills the trees, and they are then cut down to the roots, from which spring new shoots, which, in their turn, are subjected to the same process. The roots soon lose the power of sending up vigorous shoots, and get worse and worse, until at eighty years very few stumps show any signs of life. Few cork plantations are cultivated for tan-bark, as they give a better return when preserved for their yield of cork.

The wood of the cork-tree is a reddish brown. Its density, when dry, varies according to different authorities from 0.787 to 1.560. Exposed to changes from wet to dry, it soon warps. It is very tough, and, for that reason, may be used for carriage and wagon making, and for similar purposes. As the wood is heavy and warps easily, and the trunks are very short, it is hardly ever used in domestic architecture. In naval construction, curved pieces, which are continually under water and fastened with copper bolts, are very durable. Iron bolts cannot be used on account of the tannin in the wood. It also makes good piles. It burns well, but as fuel it is not so good as other species of oak. The charcoal is very good, the wood yielding about 18 per cent of that article.

### Separation of Fats and Soaps.

ACCORDING to Justus Wolff, this may be accomplished by cold aniline, which dissolves fats and resins, but does not dissolve soaps. The aniline used for this purpose, however, must be pure, and is best prepared from commercial aniline by the following method: 100 parts of ordinary aniline are mixed with hydrochloric acid to slight excess (120 to 150 parts, according to its strength), the whole diluted with 500 parts of water, and the solution of the aniline-salt promoted by shaking. The solution is then poured on a well-wetted triple or quadruple filter, and returned until it runs off clear. The clear filtrate is now decomposed by soda, added in slight excess, and the solution afterwards nearly saturated with common salt, which causes the aniline to separate and to rise to the surface, on standing. The clear aniline having been separated, it is distilled, and that portion which passes over at a temperature exceeding 180° C. is separately collected as "purified aniline." It is best to at once subject several kilograms of commercial aniline to this treatment, as a considerable quantity is lost during the process.

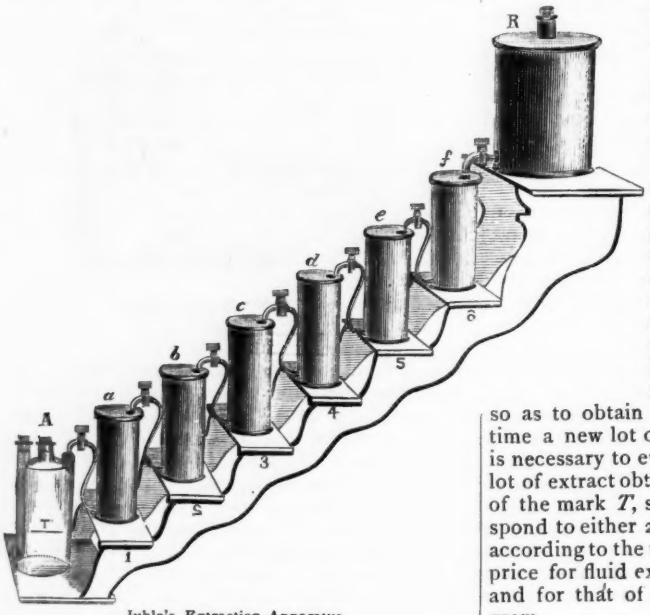
The separation of soaps and fat is accomplished as follows: Assuming we have a soap containing unsaponified fat, it is cut up as fine as possible, placed into a capsule together with 10 to 20 times its weight of purified aniline, and digested on the water-bath at a temperature of 80°–100° C. for ½ to ¾ hour, taking care to stir constantly and to break up any remaining lumps. The mixture is then allowed to cool, filtered, and the residue on the filter several times more subjected to the same treatment. The united filtered aniline-solutions are now supersaturated with hydrochloric acid, under constant stirring, mixed with3–4 times their weight of water, cooled, and shaken with ether in a tightly closed bottle. The ethereal solution, after being separated and evaporated on the water-bath, leaves behind the unsaponified fat or resin.—*Zeitsch. f. anal. Chem.*, 1879, 570.

**How to Medicate a Pig.**—At a recent meeting of an English farmer's club, Prof. McBride spoke of the difficulty of administering medicine to a pig. He said: To dose a pig, which you are sure to choke if you attempt to make him drink while he is squealing, halter him as you would for execution, and tie the rope end to a stake. He will pull back until the rope is tightly strained. When he has ceased his uproar and begins to reflect, approach him and between the back part of his jaws insert an old shoe, from which you have cut the toe leather. This he will at once begin to suck and chew. Through it pour medicine, and he will swallow any quantity you please. —*Scien. Amer.*

### Julhe's Extraction Apparatus.

Mr. Julhe, Pharmacist, of Paris (123 Faubourg du Temple), has furnished us with a description and illustration of his patented Extraction apparatus, which yields uniform and concentrated fluid extracts automatically. He particularly employs it for the preparation of Fluid Extract of Cinchona, and he claims for it, 1. that it completely exhausts the bark, so that the residue will yield nothing further either to water or to alcohol; 2. that it produces a solution of any desired degree of concentration without the aid of heat; 3. that it furnishes standard and concentrated solutions, independently of the richness of the bark employed.

The apparatus consists of 6 displacement vessels, arranged as shown in the cut, so that the liquid passing out of the upper vessel has to pass, successively, through the whole series,




Julhe's Extraction Apparatus.

before it arrives at the receptacle *A*. The menstruum is contained in the reservoir *R*. The process is best explained by supposing the apparatus to have been in operation for some time, and to be so regulated that the receiver *A* becomes filled within 24 hours to the mark *T*, corresponding, in the case of cinchona, to a weight of fluid extract equal to the weight of bark introduced into any one of the displacers. Whenever the mark *T* is reached by the fluid extract, all the faucets are closed, the receiver is emptied and replaced, the uppermost displacement vessel *f* is removed, emptied of the exhausted bark, charged with fresh bark, and then put on the lowest step of the ladder after all the other displacement vessels have been set one step higher.

The faucets are then opened again, that of reservoir *R*, however, only far enough to deliver the menstruum in drops. The outer ascending tube of the vessels causes the liquid to thoroughly penetrate and macerate the bark, which would not be the case if the faucets were at the bottom.

At the end of six days, after 6 repetitions of the process, the displacement vessel *f* will have re-arrived on the sixth step; and supposing that at each station, during its progress, it loses one half of the extractive matter, it will then contain only $\frac{1}{64}$ of the original soluble matter. The bark which is removed from the vessel *f* is not thrown away, but allowed to accumulate for a sufficient number of days, and then subjected to strong pressure, in order to remove the menstruum it still contains. This is poured into the reservoir *R*. The relation of the extract to the bark is regulated on the following basis. 10 grams of gray bark yield on average 2.1 grams of hydro-alcoholic extract; and 10 grams of yellow bark yield on an average 2.7 gm. of the same extract. Mr. Julhe prepares his fluid extract so that each kilogram of the latter represents one kilogram of the *normal* bark, yielding the beforementioned percentages of dry extract. In the case of poorer barks, he proportionately diminishes the amount of the product, so as to obtain the same result. Hence, each time a new lot of bark is taken in operation, it is necessary to evaporate 10 grams of the first lot of extract obtained, and to regulate the height of the mark *T*, so that each 10 gm. will correspond to either 2.1 gm. or 2.7 gm. of dry extract, according to the nature of the bark. Mr. Julhe's price for fluid extract of gray bark is 15 francs, and for that of yellow bark 30 francs per kilogram.

### Coto Bark in the Treatment of the Diarrhœa of Phthisis.

Dr. J. Burney Yeo, of London, has had some experience in the use of Coto bark in the diarrhœa of phthisis, following the suggestion of Dr. Frank, of Cannes, and extending over a period of two years. He says:

During this period I have given it in many cases of apparently uncontrollable diarrhœa, that is to say, cases of diarrhœa which were not controlled by the ordinary remedies, such, for example, as opium, bismuth, tannin, ipecacuanha, etc., and I have found it almost invariably have the effect of arresting the intestinal flux, and of relieving intestinal pain and irritation in a very

short time. I say 'almost' invariably, for when I first gave it I found no such good result, and on inquiry I found that one of my colleagues had employed it also without effect. This led me to consider the mode of its administration. I found that my colleague had given it mixed with other substances and made into pills, and I had given it, in the first cases in which I had tried it, blended with the Mistura Cretæ of the Pharmacopœia. It is deserving of notice that, when given in both these forms, it appeared inert; and one might have been induced to hastily discard it as a drug without remedial value. This is probably the fate of many valuable medicines which appear to fail; not from want of virtue in themselves, but from want of patience and attention in their mode of administration.

Finding that the fluid extract contained a resinous element which was precipitated in tough masses when the extract was carelessly mixed with water, I had the following mixture carefully prepared:

Fluid extract of coto, 60 minims; compound tincture of cardamoms, 60 minims. Mix these together and triturate them slowly with mucilage of acacia 3 drachms, and simple syrup 2 drachms. Finally add water to 6 ounces.

A tablespoonful of this mixture is a dose. In this form it is an opaque mixture, with a not unpleasantly warm and aromatic taste. I have usually found two or three doses of this mixture arrest or check the severest forms of phthisical diarrhœa. . . .

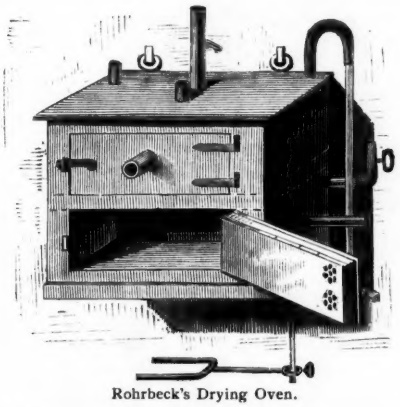
The dose of the fluid extract is from 5 to 8 minims. An alkaloid cotoin has been prepared from the bark, and is reported to have the same valuable properties as the extract of the bark itself, but of that I have no personal knowledge.*

I may add that I suggested its use in an exhaustive and uncontrollable case of diarrhœa in one of the graver forms of exophthalmic goitre, which I saw in consultation with my friend, Dr. Chaning Pearse, of Brixton. And he has since informed me that it not only arrested the diarrhœa, but also appeared to have a remarkable influence in allaying the distressing nervous phenomena associated with the case.—*The Practitioner.*

**Drying-oven with Constant Draught of Dry Air.**

Dr. Hermann Rohrbeck has devised some improvement in the usual drying ovens, whereby the complete drying of bulky precipitates at a constant temperature may be accomplished much more rapidly than usual.

The drying-oven consists of a double-walled square box, one side of which is provided with a door, or, as shown in the cut, with several doors. The upper surface shows three tubes, one of which communicates with the interior of the walls, and is intended for filling in water or other liquids, according as a higher or lower temperature is desired; the second (short) central tube communicates with the interior and is intended to receive a thermometer. The third (longer) tube, which is provided with a damper, is intended to regulate the draught and to allow the moist air to escape. The door or doors are also constructed with double walls, which are, however, not filled with water, but with fused calcium chloride. In the centre of each door a tube, also containing a damper, is soldered upon the outer surface, by which the air enters the interior of the door-walls, where it loses its moisture while passing over the calcium



Rohrbeck's Drying Oven.

chloride, and it enters the interior by way of the star-shaped perforations in the inner surface of the door (see cut). In this manner the substance which it is desired to dry is constantly supplied with a current of warm dry air, and exsiccation proceeds quite rapidly. If a temperature of 100° C. or thereabouts is to be maintained for a long time, an upright condenser may be connected with the tubulure through which the steam escapes, so that the water may be preserved at the same height. The apparatus is also provided with a water-gauge, a faucet near the bottom for drawing off the water, and, if of the kind shown in the cut, with a double-walled diaphragm, through which the water likewise circulates.

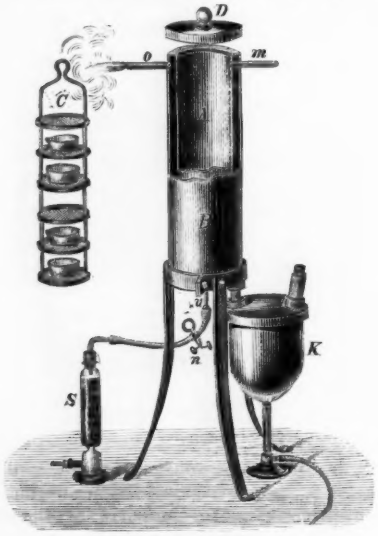
As the joints are hard-soldered, the water may be replaced by higher boiling substances, such as anilin, paraffin, etc., without injury to the apparatus. The oven may either be placed on a stand, or it may be suspended on the wall, as shown in the cut.—From *Pharm. Zeit.*, No. 91, (1879).

**Scheibler's Drying-Oven.**

In connection with the preceding, we give a description of another modification of this apparatus, which was published by C. Scheibler a

* On the Alkaloids of Coto Bark see our January number, p. 10.

few years ago.* This apparatus consists of a double-walled elongated cylinder, standing on a high tripod. The inner cylinder *A* is well tinned, and serves to receive the frame *C*, made of strong brass wire, with sieve-like movable diaphragms, intended to hold the substances to be dried. At the bottom of the cylinder a copper vessel *K* is connected with the interior of the walls of the cylinder, for the purpose of generating steam. The flame is to be so regulated that only a gentle current of steam escapes at *o*. As soon as the frame with the substances to be dried is introduced into the apparatus, the lid—which fits hermetically—is put on, and the tube *m* connected with a filter-pump, which




Scheibler's Drying Oven.

speedily removes the air and any moisture given up by the substances to be dried. From time to time the pinch-cock *n* may be opened for the admission of air, which has previously been dried by passing through the chloride of calcium tube *S*. Or, if desired, the current of air may be kept up constantly.

### Improved Baking-Powder.

BAKING-POWDERS, yeast powders, and other similar preparations, used for the manufacture of pastry, bread, etc., are usually compounded mainly of tartaric acid and bicarbonate of sodium, which, in some cases at least, are productive of mischief in the human stomach. Mr. G. E. Davis, of Heaton Moor, has recently patented an improvement in these compounds, which includes the use of acid phosphates of ammonium, potassium, or sodium, instead of tartaric acid, and gives the manufacturer of the bread, pastry, etc., the opportunity of adapting the resulting product of the baking powder to the constitutions of children, or the stomachs of dyspeptics. Mr. Davis prefers to use the acid phosphate of ammonium, as it is more powerful in its action than the corresponding acid phosphates of sodium or potassium. In preparing the mixture for baking powders, yeast powders, or egg powders with acid phosphates in the place of tartaric acid, other carbonates than the bicarbonate of sodium may be used. For instance, if it is desired to have phosphates of potassium remaining in the cakes, bread, biscuits, or pastry, he would use the carbonate or bicarbonate of potassium in conjunction with the acid phosphate of ammonium or other acid phosphates, and these produce a good dietetic bread; or carbonate of calcium, or carbonate of magnesium may be mixed with the acid phosphate or phosphates when phosphate of calcium or phosphate of magnesium is required in the bread or other food-stuff.

For general use, the ordinary bicarbonate of sodium may be mixed with the acid phosphates, when a food-stuff will be produced from it much more wholesome than from ordinary baking powders, yeast powders, or egg powders in everyday use, inasmuch as a phosphate, which medical authorities regard as an important constituent, is always left in the finished food-stuff, instead of tartrate of sodium, which is formed by the powders at present in use. The acid phosphates are made in the ordinary way, but a very economical method is to saturate a crude phosphoric acid with the base to be employed, such as ammonia, potash, or soda, or their carbonates to neutralize, and then add the necessary proportion of phosphoric acid to convert them into acid salts. This phosphoric acid may be produced by the action of a mineral acid on bone or bone-ash, or earthy phosphates, or phosphate of aluminium. There are also other ways of making the acid phosphates, such as by making phosphate of ammonium or sodium or potassium, from Redonda phosphate of aluminium, and then adding sufficient phosphoric acid to convert them into acid salt. Phosphate of ammonium has also been made together with alum from Redonda phosphate by a well-known process; this phosphate of ammonium can also be converted into acid phosphate by the addition of phosphoric acid and used as aforesaid.—*Engl. Mechanic.*

* *Dingler's Polyt. Journ.*, 223 (1877), 312. *Zeitsch. f. anal. Chem.*, 18 (1879), 579.

**Manufacture of Sulphuric Acid in Japan.**—Permission having been granted for the establishment of a sulphuric acid factory in Osaka, a company will shortly be formed with a capital of 100,000 yen. The erection of the factory had been begun.—*Amer. Mail and Exp. Jour.*

**Cinchona in India.**—The *South of India Observer* says that if the quality of the cinchona crop turns out to be good, and prices keep up, the amount realized this year will considerably exceed the £40,000 obtained last year.

[Original Communication.]

## ON THE PREPARATION OF GALLIC ACID.*

BY PAUL WEBER, PH.G.

According to the U. S. Pharmacopœia, 36 troy ounces of Aleppo galls, in fine powder, are mixed with a sufficient quantity of water, and allowed to stand for a month, until all tannic acid has been converted into gallic acid through the absorption of oxygen and escape of carbonic acid gas, as the U. S. Ph. says.

The wording in the formula is very emphatic: "let stand for a month," but the quantity of the product is very variable. Who can determine, whether the conversion from tannic into gallic acid has been completed within a month's time or not? Why not give a mode of preparation which will insure the highest attainable quantity of gallic acid? Or, if a limited amount of time is prescribed, why not note a certain degree of temperature at which fermentation is to go on? Different samples of the same lot of nutgalls will give variable amounts of gallic acid when subjected to different temperatures for the same length of time. To prove this, I powdered 25 ounces of nutgall, and divided this into four equal parts, prepared them as the Pharmacopœia directs, and placed them aside, occasionally stirring, for one month.

*Sample* 1.—6 oz. 2 dr.; temperature constant, 60–64° F.; time one month. Amount gallic acid: 6 dr. 24 grains.

*Sample* 2.—6 oz. 2 dr.; temperature 72–82° F.; time one month. Amount gallic acid, 8 dr. 15½ grains.

*Sample* 3.—6 oz. 2 dr.; temperature 96–100° F.; time, one month. Amount gallic acid, 9 dr. 84 grains.

*Sample* 4.—6 oz. 2 dr.; temperature 110–114° F.; time, one month. Amount gallic acid, 11 dr. 14 grains.

Of these same galls I powdered again 25 ounces. The first portion, 12 oz. 4 dr., I prepared according to the Pharmacopœia, and set it aside at a temperature of 85–90° F. At the expiration of three weeks, I took a filtered portion, and added to it a solution of Russian isinglass, and obtained a voluminous precipitate, showing that the conversion had not fully set in. After a lapse of four weeks I added again a solution of isinglass, when there was still a copious precipitate, but not quite as dense as the first. After thirty-five days, the precipitation became somewhat transparent in appearance. At the termination of the forty-first day, there was still a turbidity after the addition of a solution of isinglass, so light, however, that I considered the conversion practically completed. I now passed on to the second stage of the process, expressing, boiling the residue with water, and filtering through animal charcoal.

*Sample* 5.—12 oz. 4 dr.; temperature 85–90° F.; time, 41 days. Amount gallic acid, 3 oz. 38 grains.

The second 12 oz. 4 dr. of galls I used for the preparation of tannic acid, and obtained 4 oz. 54 grains. If we now calculate from the amount of tannic acid actually obtained the obtainable amount of gallic acid, we will see that the actual yield of gallic acid very nearly corresponds with the theoretical amount; tannic acid being a glucoside, it will, by the aid of the ferment contained in the galls, and in the presence of water, split up into gallic acid and sugar. The sugar is ultimately converted into grape-sugar, and thence into carbonic acid and alcohol. The reaction is as follows:

$$C_{54}H_{22}O_{34} + 4H_2O + \text{ferment} = 3\underbrace{C_{14}H_6O_{10}}_{\text{Gallic acid}} + \underbrace{C_{12}H_{12}O_{12}}_{\text{Sugar.}}$$

Now, if we calculate the amount of gallic acid obtainable from 4 ℥ 54 grains (or 1,974 grains) of tannic acid, we will obtain the following result:

$$\overbrace{C_{54}H_{22}O_{34}}^{\text{Tannic acid.}} + 4H_2O : 3(C_{14}H_6O_{10}) = 1{,}974 : x$$
$$674 : 510 = 1{,}974 : x$$

$x = 1{,}494$ grains of $C_{14}H_6O_{10} = 3$ oz. 54 grains.

It will be seen from this that the amount of gallic acid obtainable from any given quantity of nutgalls, according to the U. S. process, is very indefinite. The formula for gallic acid should read: Take of nutgalls, in fine powder, 36 troy oz., purified animal charcoal, distilled water, each a sufficient quantity. Mix the nutgalls with sufficient water to form a thin paste, and set aside in a shallow porcelain vessel in a warm place. Stir occasionally, adding a little water from time to time, sufficient to preserve the semi-fluid consistence. Try a small filtered portion, from time to time, with a solution of Russian isinglass. If no precipitate is formed, or only a slight turbidity, then the process is completed. Strain and follow further directions as laid down in the U. S. Ph.

* Abstract of a thesis presented to the College of Pharmacy of the City of New York.

### Borax as a Preservative of Butter.

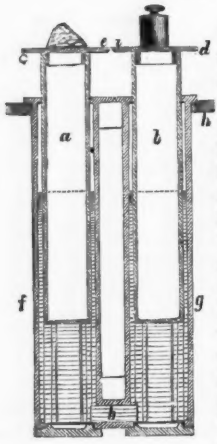
Mr. J. Schuyler Crosby, U. S. Consul at Florence, Italy, recently communicated to the Department of Agriculture information in relation to the preservation of butter by means of borax which is worthy of attention. He says:

"The opinion has been entertained by farmers and exporters of butter of Tuscany and Lombardy that the bad flavor often acquired by butter shipped to foreign countries was derived from the salt used in its preservation. Some impurities exist in salt, and especially chlorides

of calcium and magnesium, and they may give a bad flavor to the butter.

"But the analysis of the salt used in Lombardy shows that it is quite as pure as the salt used in Germany or elsewhere. Consequently salt alone could not be the principal cause of good butter becoming bad. The antiseptic virtues of borax being well known, as well as the experiments to preserve meat and other edibles by its aid, it occurred that it might be substituted in butter instead of common salt."

### Hydrostatic Balance.




C. WACKERMANN, of Kalk (Prussia), has obtained a patent for the hydrostatic balance of which we give an illustration. It depends upon the well-known law that a floating body weighs precisely as much as the volume of liquid displaced by it. Two open parallel cylindrical reservoirs, connected with each other at the bottom (*h*) are partly filled with a liquid, and two equally large and heavy hollow cylinders, *a* and *b*, introduced into them. These latter cylinders are provided with top-plates, serving as scale-pans. When not loaded, the pans must be exactly opposite each other. Weighing, of course, is performed in the usual manner. The whole apparatus may be let into the counter or table *h*, and, if the proper liquid is chosen, is not liable to get out of order.—*Dingler's Polyt. Journ.*, 234, 205.

### Aconitum Heterophyllum.

(Abstract of a paper by Dr. M. Dunin v. Wasowicz.*)

SOME years ago, the attention of European physicians resident in India was directed to a nodular root, which was known to the natives under the names of *utees*, *atees*, and *atis*,† which was used in fevers on account of its antiperiodic effects. Although the names *utees*, etc., were also applied to other drugs, still, in this connection, it was understood principally as referring to the *Aconitum heterophyllum* Wallich. The root of this is said to have no poisonous properties, and to be really a very valuable remedy for intermittent and other fevers. It is administered, in ordinary intermittent fever, in the form of powder, in doses of twenty grains, and as a simple tonic in doses of five to ten grains, three times a day. No information respecting the drug was extant before 1866, except the statement of O'Shaughnessy, that it has long been famous among Indian drugs on account of its tonic effects. Prof. Von Schroff, in 1866, and later his son, contributed some cursory information on this drug; and Flückiger and Hanbury, in their Pharmacographia, brought the information, that Broughton has succeeded in obtaining from the root an alkaloid, which the latter named atisine, and to which he assigned, on the basis of a platinum-salt analysis, the formula $C_{46}H_{74}N_2O_9$. Subsequently, Prof. Flückiger succeeded in obtaining a quantity (about five kilos) of this root, and intrusted its examination to the author. An abstract of his paper is given in the following:

"*Aconitum heterophyllum* Wallich grows in the mild districts of the western Himalayas, in Simla, Kashmir, and Kumaon, at a height of 8,300 to 13,300 feet above the sea level. The finest and largest samples grow upon the mountains Choor, Shalma, and Kadarkantar. The plant is from one to three feet high, with heart-shaped, acute, indistinctly five-lobed, or sometimes incised, radiate-veined, leathery leaves (fig. 1), and racemes of large, dirty-yellow, purple-veined, or entirely blue flowers arranged in a panicle. The calyx is furnished with a semicircular, ascending, pubescent helmet; the spur is ovate and obtuse; the limb long and bent downwards; the stamens are arrow-shaped and winged; the five carpels and the bracts roundish or rather long. The roots, which are only to be found in Indian bazars, are ovoid, longish or turnip-shaped tubers, almost always flattened at the upper end, but generally conical at the lower extremity, and seldom sharp-pointed. Some few of the tubers are stalk-shaped. They are closely but irregularly covered with scars of lateral roots, and here and there small remains of leaves are found

* *Archiv. d. Pharm.* [3], 14, 193, and *Pharm. Journ. and Trans.*, Oct. 18th, 1879.

† *Utees*, *atees*, and *atis*. The nearest transcription of the present Hindu vernacular term for this plant is the second of the above forms, namely, atees, or atîs. This is derived from the Sanscrit *ati-vishâ*, meaning "exceedingly poisonous." Yet the term is not applied to the poisonous species of aconite, *Aconitum Napellus* L. and *Aconitum ferox* Wall., which are usually denoted by the simple noun *vishâ* (derived from *visha* "poison"). All these varieties have, besides, other names, which, in most cases, indicate some particular property of the root. They are often mentioned in Hindu medical works. Compare *Dutt*, the Materia Medica of the Hindus, pp. 97, 101. The *Vâchaspatya*, an encyclopedia written in Sanscrit, which is being published in Calcutta, quotes, from a medical treatise, the following passage, which we translate for our readers, under the heading, ativishâ (Vol. I., p. 204: "Ativishâ is of three kinds: white, black, and reddish-brown; it produces chyle in digestion [rasavîryyâ vipâkeshu, *i. e.*, it is a tonic], is not poisonous [nirvishâ], and of superior virtues." The *Madanapâla-Nighantu*, a Sanskrit medical glossary, written A.D. 1374, has the following (Calcutta edition, 1875, p. 24): "Ativishâ has a white tuber [suklakandâ; this is also, by itself, used as a name of the drug]; is not poisonous [avishâ]; and, further, it is even an antidote to poison [prativishâ]." In accordance with the etymology, the name of the alkaloid should be spelled *atisine*, not atesine.

at the upper end of some root. Externally the roots are pale, yellowish-gray, in some parts almost white, with numerous longitudinal wrinkles, and at the upper end from two to five transverse wrinkles, though only in some of the roots. In some cases there is a furrow or channel-shaped depression extending the whole length of the root. The roots are from ⅜ inch to 3 inches long. The thickest diameter is from

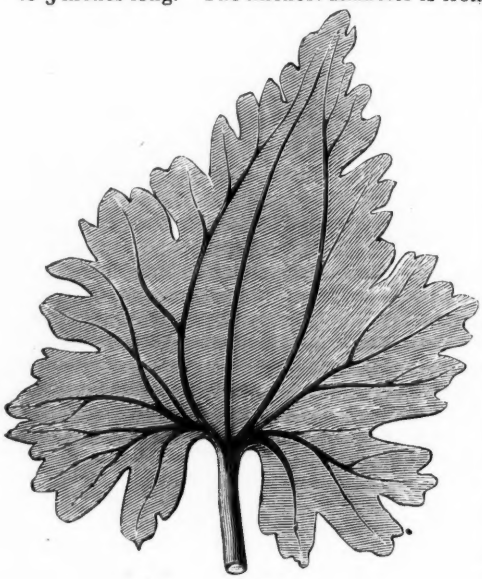


FIG. 1.

¼ inch to nearly 1 inch, and they weigh from 7 grains upwards, the weight of most of the tubers varying between 38 and 90 grains. The fracture is almost even; within, the tubers are clear white. The taste is mealy, somewhat mucilaginous and bitter, without any biting or acrid after-taste. Digested in cold water for some hours,

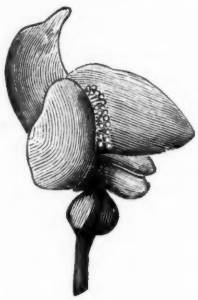


FIG. 2.

FIG. 3.

the tubers swell up and, after perfect drying, become hard and horny. This is also the case when they are digested with hot water.

Under the microscope a transverse section of the root presents the following appearances: First, there is an outer rind, consisting of 4, 5, or 6 rows of somewhat rounded tabular cells, crowded together and having slightly brown-colored walls. Next comes a rind consisting of 5–12 rows of collenchymatous cells of uniform size and slightly thickened. This is followed by a distinctly yellow zone, the cells of which differ from those of the central portion only by their color. The general mass of the rest of the tissue is formed of polyhedral cells of a paren-

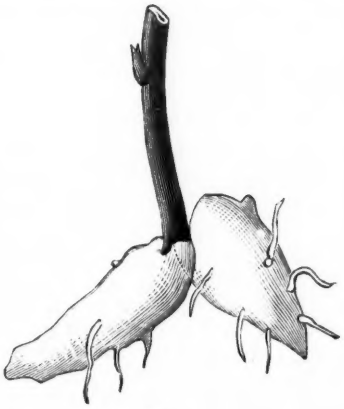


FIG. 4.

chymatous nature, interspersed with irregularly distributed vascular bundles (Fig. 5), seldom consisting of single vessels, but more frequently arranged in rows of groups of 3 to 9. The centre is formed by a mass of polyhedral cells, exceeding in size three or four times those of the principal tissue. Fig. 4 represents the appearance of a section of the root towards its end.

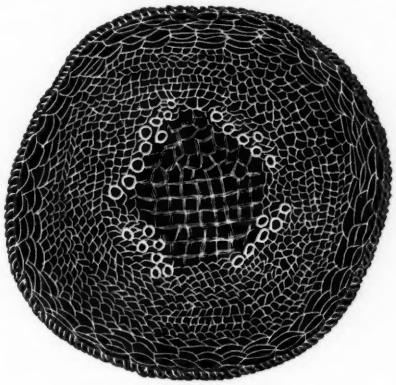
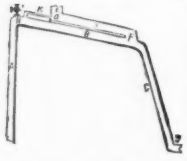


FIG. 5.

*Constituents.*—The author found the roots to contain: 1. A fat of soft consistence, probably a mixture of olein, palmitin, and stearin; 2, aconitic acid; 3, an acid allied to ordinary tannic acid; 4, cane-sugar; 5, gum; 6, pectin; 7, starch; and 8, the alkaloid "atesine," already

discovered by Broughton, and probably accompanied by a second non-crystallizable alkaloid. The alkaloid atesine could not be obtained in a crystalline state, but only in form of a white mass, which, after drying in vacuo, can be reduced to a white powder. Its analysis yielded figures which closely approach the formula given by Broughton, differing from that of the latter only by having one atom less of hydrogen: $C_{46}H_{74}N_2O_4$. The author found, however, that the hydrochlorate, hydrobromate, and hydriodate of the alkaloid formed handsome crystalline salts, of difficult solubility. The analysis of the hydriodate ($C_{46}H_{74}N_2O_4.HI + H_2O$) confirmed the formula of the alkaloid.

### A new Siphon.



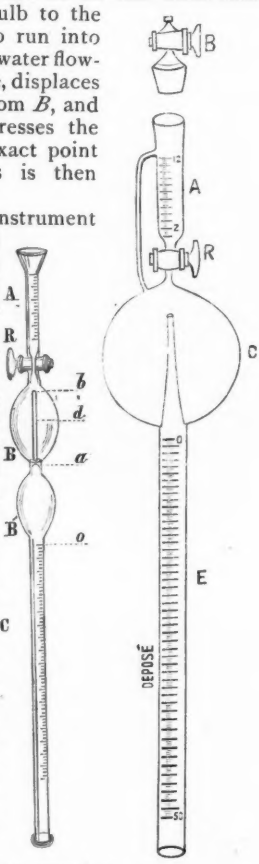
Deleuze's Siphon.

A GERMAN patent has recently been obtained by Henri Ferdinand Deleuze of Perpignan, of France, for a new siphon of which an illustration is here given. In order to start the siphon, the strait leg *A* is inserted in the liquid, the exit at *J* closed with a cork, and the faucet *I* opened, to allow the air to escape. A sufficient quantity of the same liquid as is to be siphoned off is then poured into the siphon through the opening at *E*. As soon as the tubes are full, this opening is tightly closed, the faucet turned off, and, on removing the stopper in *J*, the liquid will commence to flow.

### Two New Ureameters.

THE volumetric estimation of urea is a favorite subject of investigation for French chemists. Two new apparatuses for this purpose have lately been announced, which are illustrated and described in the following:

1. *Yvon's apparatus.* This is intended to be used over water, instead of over mercury. It consists of a graduated funnel-tube *A*, intended to receive, successively, the urine and the hypobromite solution. [It is scarcely necessary here to repeat the explanation of the chemical process upon which the method depends; a solution of urea brought in contact with hypochlorites or hypobromites is decomposed with the liberation of nitrogen gas, from the amount of which the quantity of urea is calculated; see NEW REM., 1877, 265; 292.] This is separated by a faucet from two globes, the upper one of which, *B*, is closed at the bottom, and communicates with the lower by the narrow tube *d*. The lower bulb finally ends in a graduated tube, *C*, in which the measurement of the gas is made. The point o must be determined for each apparatus separately. It is necessary that the cubic contents of the bulb *B*, up to the level of the small tube at *b*, be exactly equal to the cubic contents of the tube *d*, plus those of the bulb *B*, down to the mark o. This is accomplished in the following manner: The instrument is plunged into water, and the faucet *R* slightly opened, until the water has risen to the top of the bulb *B'*, at *a*. The faucet is now closed, the instrument raised somewhat, and the tube *A* is filled with water. By gently turning the faucet, the water is allowed to flow into the tube *B*, taking care that no air can enter until the water fills the bulb to the point *b*, and begins to run into the lower bulb. The water flowing from *A*, of course, displaces its own bulk of air from *B*, and correspondingly depresses the water in *B'*. The exact point to which it recedes is then marked o.




When using the instrument for assay, it is plunged into water until the latter rises to *a*, and from 1 to 5 cc. of the urine introduced into *A*. After slightly raising the instrument, the urine is allowed to flow through the faucet into the bulb *B*. The tube *A* having been washed with a dilute solution of caustic soda, the hypobromite of sodium is introduced in the same manner. After the effervescence ceases, water is added through the tube *A*, until it rises to the point *b*, and begins to trickle down into the next bulb. All the gas now accumulated below the zero-point represents the nitrogen given off during the reaction.

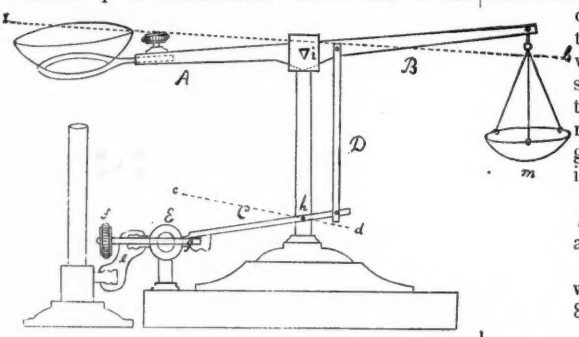
Taking into consideration the necessary corrections for temperature, etc., 4 cubic centimetres of nitrogen represent 1 centigram of urea. —*Journ. de Ph. et Ch.*, August.

2. *G. Buts' apparatus.* This has one particular advantage, namely, that it absolutely prevents the accidental entrance of air when introducing the urine or the hypobromite solution. It hardly needs a special description, except, perhaps, to point out the small connecting-tube, between the bulb *C* and the upper part of the tube *A*, which itself may be closed by a glass stopper provided with a faucet. The measured urine having been introduced into the apparatus previously plunged into water, the tube *A* hav-

ing first been rinsed with a dilute soda solution and afterwards dried with blotting-paper, the necessary quantity of hypobromite solution is introduced into *A*, and the stopper *B* inserted. Everything being tight, the stopper *R* is now opened, when the hypobromite flowing upon the urine will decompose the urea with the separation of nitrogen gas. As soon as the reaction is finished, the apparatus is raised up until the column of water inside of the tube *E* stands on a level with the water outside. The number of divisions on the graduated scale are then read off and the amount of urea calculated in the usual manner. The author prepares the hypobromite solution from 5 cc. of bromine, 50 cc. of soda solution, spec. gr. 1.33, and 100 cc. of distilled water.—*Rép. de Pharm.*, Nov.

### Automatic Balance Regulator for Evaporation or Distillation.

PROF. A. WAGNER has constructed an ingenious apparatus for automatically interrupting an evaporation or distillation, when the proper degree of concentration has been attained. The apparatus is in principle a balance. The beam *A B* is so mounted that it can play but a limited distance up- or downwards. At the end of the




arm *A*, a ring, or other arrangement for holding a capsule or a retort, may be fastened by means of the screw *n*, while the other arm carries the scale-pan *m*. The arm *B* also carries the rod *D*, which acts on *C*, and causes the latter to assume a position parallel to the beam *A B*. *E* is an easily turnable faucet, connected at one end with the supply of gas, and at the other, *e*, with the Bunsen's burner, heating the capsule or retort. The handle of the stop-cock *E* has two unequal arms, the shorter being at *g*, the longer having a screw-thread cut upon it, and carrying a milled head, which may be set at option. As long as the capsule is full and heavy, the beam will have the position actually indicated by the cut. When the liquid has evaporated to a certain weight, the arm *A* will become lighter, and the beam then occupy the position of the dotted lines *a b*. In consequence of this, the rod *C* will have the position *c d*. Hence, as the long arm of *C* does not any more press upon the short arm *g* of the gas-cock, the heavy end *f* of the latter will sink, and thus shut off the supply of gas.—*Carl's Repert. f. Exp. Phys.*, 1879, 199.

### British Weights and Measures.

THE act passed some time ago by the British Parliament, providing for the rigid control and inspection of apothecaries' weights and measures, is on the point of being carried out in practice; at least, there is nothing to prevent the authorities of any county from at once beginning operations, unless it be the want of proper standards. But even this is being rapidly supplied. The execution of the act is placed under the general supervision of the Board of Trade, which is the body authorizing the proper denominations of standards, prescribing the manner of stamping or marking weights and measures, and establishing limits of error. No county, however, is required to obtain standard sets of weights and measures from the Board of Trade; it is immaterial whence they are obtained, as long as the law is properly carried out. Naturally, in a test-case, there would be raised a question as to the correctness of "standards" which are not obtained from the Board of Trade, or other official authority; and the onus of proving the incorrectness of the "standards" would fall on the defendant—which, to say the least, is rather unfair. In order to put our readers in possession of the main points of the new regulations, we give some of their prominent features in the following:

1. *Denominations of Apothecaries' Weights.*—The following standards are adopted by the Board of Trade:

10, 8, 6, 4, 2, 1 ounces apothecaries' weight, which may be abbreviated 10, 8, 6, 4, 2, 1 oz. tr.

4 drachms or ½ ounce, 2 drachms, 1 drachm, 2 scruples, 1½ scruples or half a drachm, 1 scruple, ½ scruple, apothecaries' weight, which may be abbreviated thus: ℥ iv. or ½ oz. tr., ℥ ii., ℥ i., ℈ ii., ℥ ss., ℈ i., ℈ ss.

6, 5, 4, 3, 2, 1, ½ grains, or abbreviated "gr."

These weights are identical with the troy-weights in use in the U. S.

2. *Limit of Error allowed in Weights.*—The following limits of error may be allowed *in excess*, but not in deficiency:

| | |
|---|---|
| 10 to 2 oz. tr. | 0.1 grain. |
| 8 to 1 drachm | 0.05 " |
| 2 to ½ scruple | 0.03 " |
| 6 to 1 grain | 0.02 " |
| ½ grain | 0.01 " |

3. The shape of the standards from 8 to 1 oz. tr. should be cylindrical with a small knob; from ℥ 3 to ½ ℈, either cylindrical or flat; from 6 to ½ gr., either wire shape or flat.

The standards are to be made of bronze, gun-

metal, or hard brass. Below ½ ℈ they should be made of platinum or aluminium.

4. *Apothecaries' Measures.*—The denominations of every measure or an abbreviation thereof should be engraved on the measure. The usual measures are the following:

40 fluid ounces to ½ fluid ounce (40 fl. oz. to ½ fl. oz.).

16 fluid drachms to ½ fluid drachm (16 fl. dr. to ½ fl. dr.).

60 minims to 1 minim (60 min. to 1 min.).

5. *Limit of Error allowed in Measures.*—

| | | | |
|---|---|---|---|
| 40 fl. oz. to 21 fl. oz. | 8 | grains | of water. |
| 20 fl. oz. to 6 fl. oz. | 6 | " | " " |
| 5 fl. oz. to 1 fl. oz. | 4 | " | " " |
| ½ fl. oz. | 2 | " | " " |
| 16 fl. dr. to 5 fl. dr. | 4 | " | " " |
| 4 fl. dr. to 31 min. (?) | 2 | " | " " |

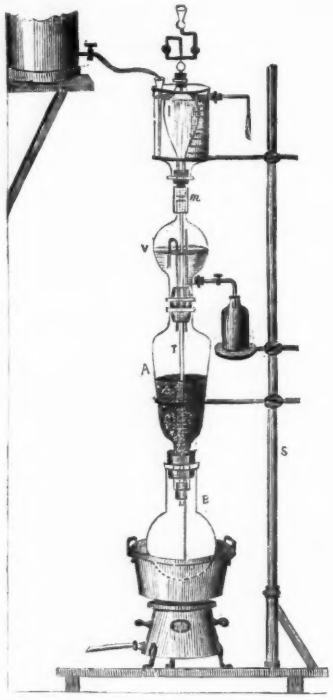
below 30 min., no appreciable error allowed.

6. The standards of the Board of Trade are thirteen in number, being made of gun-metal, and cylindrical in shape, each for a separate bulk measured at 62°F.

### Apparatus for Continuous Displacement.

To the long list of apparatuses devised for continuous displacement or extraction, another has been added by Mr. G. Guérin, of Lyons. The flask *B*, which has a wide neck, is intended to receive the volatile liquid used for extraction. Into the neck is fitted, by means of a tightly fitting cork, the percolator *A*, containing the substance to be extracted. The percolator is connected with a globular receiver *V*, containing three tubulures, the lateral one of which terminates in a stoppered bent tube, pointing into an empty bottle. Over the receiver is fixed a condensing apparatus, surmounted by a safety-tube filled with mercury. The substance which is to be extracted having been introduced into the percolator *A*, and a sufficient amount of the volatile menstruum having been introduced into flask, the apparatus is connected together as shown in the illustration, and the water-bath surrounding the flask *B* heated by means of the gas-stove.

As soon as the liquid boils, the vapors ascend through the central tube *T* into the pear-shaped receiver *I*, which is kept cold by a supply of water. The upper part of the tube *T*, where it passes through the joint *m* and through the neck of the condenser, is *not* in contact with the walls of the apparatus. Hence, the condensed liquid flows down the sides of the condenser *I* into the receiver *V*. The latter is provided with a a small straight air-tube and with a bent siphon-tube, both communicating with the percolator below. As soon as enough liquid has accumulated in the receiver to rise over the bend of the siphon-tube, it will begin to flow into the percolator, until the short leg of the siphon is clear of the liquid. The flow will then stop until it has risen to the former level. The liquid falling upon the substance in the percolator will penetrate it and finally pass into the flask *B*, loaded with the soluble matters.—*Journ. de Ph. et Chim.*, 1879, 511.




Guérin's Continual Displacement Apparatus.

### New Original Formulas for Bouquets.

BY G. DUBELLE, PH.D.

THE growing importance for new perfumes has already called forth a considerable amount of formulas in publication, but all the writers fail to present the subject in a form suited to the increasing demand. It is the aim of the writer to publish occasionally new and well approved receipts for the use of our manufacturing perfumers and druggists.

*Victoria Regia.*

| | | |
|---|---|---|
| Extract of tuberose | 20 | fl. oz. |
| " jasmin | 16 | " |
| " neroli, | | |
| " rose, | | |
| " acacia flowers, each | 4 | " |
| " vanilla | 3 | " |
| Essence of civet | 1 | " |
| Oil of bergamot | 1 | " |
| " bitter almonds | 5 | drops. |

*Alpine Rose.*

| | | |
|---|---|---|
| Essence bouquet | 16 | fl. oz. |
| Triple extract of rose, | | |
| Extract of jasmin, | | |
| " reseda, each | 12 | " |
| Essence of ambergris | 4 | " |
| " civet | 2 | " |

*H. M. Pinafore Bouquet.*

| | | |
|---|---|---|
| Triple extract of rose | 16 | fl. oz. |
| Extract of violets | 12 | " |
| " neroli | 8 | " |
| " musk | 1 | " |
| Oil of bergamot | ¼ | " |
| " citron | ⅛ | " |
| " cardamom | 40 | drops. |
| " melisse | 20 | " |
| " coriander, | | |
| " thyme | each 10 | " |

*Flowers of Eden.*

| | | |
|---|---|---|
| Triple extr. of night blooming cereus | 16 | fl. oz. |
| Triple extr. of lily of the valley | 14 | " |
| " " spring flowers, | | |
| " " ylang-ylang, | | |
| Eau de millefleurs | each 12 | " |
| Essence of musk | 2 | " |

*Flowers of Love.*

| | | |
|---|---|---|
| Triple extract of rose | 16 | fl. oz. |
| Extract of jasmin | 14 | " |
| " acacia flowers | 12 | " |
| " orange flowers, | | |
| " tuberose, | | |
| " hyacinthe | each 4 | " |
| " jonquil, | | |
| " vanilla | each 2 | " |
| Essence of ambergris | 1½ | " |

*Rose of the East.*

| | | |
|---|---|---|
| Triple extract of rose | 16 | fl. oz. |
| Extract of mossrose | 12 | " |
| Oil of sandal, | | |
| " geranium rose | each ⅛ | " |
| " ylang-ylang | 1/16 | " |

*Florilene Bouquet.*

| | | |
|---|---|---|
| Triple extract of rose | 16 | fl. oz. |
| Extract of tuberose, | | |
| " violets | each 8 | " |
| " heliotrope | 4 | " |
| " orange flowers, | | |
| " verbena | each 3 | " |
| Essence of musk, | | |
| " ambergris | each 2 | " |
| Oil of bergamot | 1 | " |

*Modjeska Bouquet.*

| | | |
|---|---|---|
| Extract of jonquil, | | |
| " reseda, | | |
| " tuberose | each 16 | fl. oz. |
| " cassia flowers, | | |
| " violets | each 12 | " |
| Essence of musk | 2 | " |
| Oil of bergamot, | | |
| " ylang-ylang | each ½ | " |
| " otto rose, | | |
| " lavender | each ¼ | " |

**Original Packages of Otto of Rose.**—Otto of rose is now generally imported in kunkumas, which are flattened, round, tin bottles, sewed up in thick white woollen cloth, holding 1 to 10 lbs., and bearing a calico label inscribed in Turkish characters. The label should indicate the tare of the bottle in Turkish weights, the rough rule for calculating which is to take 10 drachms as equal to 1 oz. English. The small, gilt, white, glass bottles, which are commonly the only original bottles known to retail druggists, are imported from Germany into Constantinople, and are there filled by the merchants. These also should bear a calico label, indicating the tare in Turkish weights. The epithets Virgin and Optiss are of English origin; they are quite unknown in Turkey, and seem to have no equivalents there. They are probably applied arbitrarily, according to the vendor's belief in the purity of his samples. All gilt bottles of otto may be treated alike.

## RECENT PAPERS.

### The Art of Dispensing.*

(*Continued.*)

PILLS AND THEIR EXCIPIENTS.

As far as possible it is advisable to send out pills of the same weight as prescribed, and since inspissation is more or less inconvenient at the dispensing counter, this object is attained by keeping the more common extracts both in a soft condition and in a state sufficiently hard to roll into pills with but little addition of powder. Ext. coloc. co. and ext. rhei are more conveniently kept in the state of powder, as also are several pill masses, *e.g.*, pil. asafœt. co., pil. cambog. co., pil. aloes et ferri, pil. aloes et myrrhæ, pil. hyd. subchlor. co., etc., due allowance being made for the absence of excipient, which is easily calculated from the B.P. quantities. Pil. hyd. subchlor. co., with pill masses having an aqueous excipient, invariably forms a crumbly combination; this is remedied by using the former in powder, *i.e.*, by omitting the castor oil.

Where no excipient is ordered, the simplest should be selected, and that which gives least increase to the size of the pill.

As a rule, the selection of the excipient would be better left to the experience of the dispenser, since the physician occasionally betrays lack of intimacy with pharmaceutical principles. Thus.

Bismuthi subnit. ..... ℥ i.
Pulv. ipecac. co. ..... ℥ i.
Ol. carui ..... q.s. ut
Fiant pilulæ xxiv.

The composition of a pill mass will at once indicate the excipient to the experienced pharmacist.

For substances insoluble, or nearly so, in water, and entirely devoid of adhesive property, such as quinine, oxysalts of bismuth, oxalate of cerium, salicylic acid, valerianate of zinc, etc., 5 per cent of tragacanth should be well incorporated, and the mass made rather soft with syrup or confection of hips, thinned by addition of an equal weight of syrup.

The objection to tragacanth on the ground of the subsequent cracking of the pill is without foundation, and the cause must be looked for elsewhere; frequently it results from acid extracts acting upon a trace of carbonate of calcium scraped from a marble mortar with a pill-knife.

Many substances do not require the addition of an adhesive excipient, *e.g.* the extracts of aloes, pulv. pil. coloc. co., p. ext. coloc. co., etc., form a good mass with water (about ℥ iv. to ℥ i.); p. pil. asafœt. co. and p. pil. hydrarg. subchlor. co. are readily massed with S.V.R.† In either of these cases a slightly warmed mortar should be used. Jalapin, iridin, euonymin, and similar bodies also make a satisfactory mass with rectified spirit. Pil. aloes et ferri gets exceedingly hard in a short time, and should be kept in powder, omitting the confection, and adding ½ oz. of p. glycyrrh. to the B.P. quantities; then 2 of the powder = 3 of the mass.

*Sugar of Milk*, in *crystals*, is useful for dividing any active ingredient when making pills. (The powder is inferior for this purpose.)

A small water-bath or a small hot-water plate should be at hand for evaporating pills to suitable consistence, adding a little tragacanth, if necessary.

Many operations in pill-making are greatly facilitated by the use of a *smooth slab of iron*, about 9 inches square and 1 inch in thickness; it is quickly warmed over a fire or gas flame, and retains its heat for a considerable period. Pills which are otherwise quite unmanageable may frequently be rolled with ease on such a warmed slab. Extracts and pill masses can be speedily inspissated, care

* Adapted from the *Chemists' and Druggists' Diary* for 1880.
† Spiritis Vini Rectificatus.

being taken, however, that it is not heated beyond 80° or 90° C. This is easily regulated by the touch of the finger.

Pills containing much aloes, colocynth pill or extract, asafœtida, or galbanum, being so liable to fall, should be made with its assistance. Black pitch, solid Chian turpentine, and some other substances hard and brittle in the cold, may be rolled on the hot iron slab and made into pills without addition of a liquid excipient, nor do they require fibrous material, such as licorice powder, to prevent falling.

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BALSAMUM PERUVIANUM.—When balsam of Peru is ordered in pills, bread-crumb is a good excipient. A little beeswax also answers well. When the balsam is in large excess, it may be partly solidified by adding to it from half to one-third its weight of calcined magnesia, and allowing it to stand for some hours.

COPAIBA can be made into a good mass by adding to it half its weight or less of slaked lime, and combining it with the other ingredients.

For Bals. copaiba use carbonate of magnesia.

Pills of Canada Balsam, or Tar.—Licorice powder and magnesia are good excipients.

---

BENZOIC ACID; glycerine, gtt. i. to each 5 grains.

CALOMEL.—Calcined magnesia must not be used in a pill containing calomel, because it reduces it to the black oxide.

CAMPHOR should be finely powdered and massed with a tenacious extract or p. tragacanth and thin conserve. *Spirit* must be carefully avoided, unless a large proportion of a resinous body is present, thus:—

P. zinci oxidi. .....gr. xij.
P. camphoræ.....gr. vi.
Ext. belladonnæ.....gr. iij.
Fiant pilulæ xxiv.

This forms a good mass with S.V.R.

For camphor use soap and castor oil.

Camphor pills should always be put into a bottle.

CAMPHOR AND HYOSCYAMUS.—Powder the camphor, with the addition of a little water instead of spirit. The addition of extract of henbane will then make a good plastic mass, retaining its consistence for some time.—(*Dr. Symes.*)

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CARBOLIC ACID.—An American writer has suggested the following as a convenient form for administering carbolic acid:—

Carbolic acid.....1
Powdered elm bark.....2
Gum arabic.....1
Tragacanth paste.....q.s.

Make pills of the required size which may be coated with tolu or silver leaf.

A good excipient is a mixture of powdered soap, 1 part, and powdered licorice root, 5 parts. Three grains of this will take up 1 grain of carbolic acid or 1 minim of creasote or essential oils, and make a firm pliable mass without any addition.

Two grains of bread-crumb will make a mass with 1 grain of crystallized carbolic acid.

Wheaten flour and simple syrup give a plastic mass with carbolic acid.

CREASOTE.—Mr. Martindale states that the best material for combining creasote into pills is powdered animal soap, B. P. Mix the soap and the creasote in equal parts in a wide-mouthed stoppered bottle; mix well, and digest in a water bath till they combine. This, on cooling, forms a plastic mass suitable for forming pills, and can be combined with other ingredients, preferably in powder.

A few shreds of yellow wax with a little powdered soap, when not incompatible, make good pills, but they are somewhat insoluble. Pulv. glycyrrhizæ may be substituted for the soap. Light calcined magnesia (1 grain to 2 minims of creasote) mixed with creasote solidifies in a few hours, and can then be easily worked into pills; but this addition cannot be recommended. Mr. Martindale says that pills thus made are as insoluble as marbles. Two grains of bread-crumb will make a mass with one grain of creasote.

Creasote.—
Creasote.....gtt. xxiv.
Pulv. amygdal .....gr. xxx.
Calc. magnesia.....gr. x.
Ft. pil. xij.

Or, Creasote.....gtt. xxiv.
Pulv. saponis,
Ceræ flav., āā.....gr. xij.

Ft. pil. xij. These are to be rubbed down in warm mortar. When cold they are sufficiently solid to divide into pills.

When essential oils are ordered with aloes, ext. aloes, pil. or ext. coloc. co., pil. asafœtida co., etc., these, in fine powder, should be triturated with the oil for a few minutes, the remaining ingredients, if any, added; then, if too hard, use S.V.R., or, on the other hand, p. glycyrrh. q.s. Aqueous excipients should be avoided in presence of oils.

Essential oils frequently form good excipients, as in the following examples:—

Pil. hydrarg.....gr. 4
P. ext. coloc. co.....gr. 6
Podophyllin.....gr. ¼
Olei anthem.....♏ i.
Fiant pilulæ ij.

P. pil. aloes et ferri,
P. guaiaci res., āā.....ʒ i.
Ol. sabinæ.....♏ xv.
Fiant pilulæ xxiv.

Ext. nucis vom.....gr. ¼
Creasoti.....♏ i.
Asafœtidæ.....gr. iij.
P. glycyrrh.....gr. ij.
Fiant pilulæ.

Ext. hyoscy.....gr. i.
P. pil. coloc co.....gr. iv.
Ol. cajuputi.....♏ i.
Fiant pilulæ.

In a pill with a large quantity of any essential oil, it sometimes saves trouble to rub the oil with a few grains of magnesia before adding the other ingredients.

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CROTON OIL with crumb of bread as excipient. N.B.—A fairly good substitute for crumb of bread is equal parts of flour and conf. of rose.

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CRYSTALLINE SALTS soluble in water require a little care. They should be very finely powdered, and massed with thin conserve, adding, if necessary, a little tragacanth. If silvered, they must be varnished with tolu, and allowed to dry, before using mucilage, or else silvered with the varnishing solution alone.

Potas. brom.,
Ferri sulph., āā.....ʒ ss.
Ext. nucis vom.....gr. iiss.
Ext. gentianæ.....q.s. ut
Fiant pilulæ xv.

In this formula a metathetical reaction takes place between the two salts, the water of crystallization in the sulphate of iron being liberated; consequently, a very small quantity of extract suffices. Since bromide of iron is formed, the pills should be varnished and sent out in a bottle.

Potassii iodidi.....gr. 24
Pil. rhei co.....gr. 48
Fiant pilulæ xxiv.

The pill mass should be made rather soft by a few drops of water, if necessary, before the powdered iodide is added.

Ferri sulph. exsic. ..... ʒ i.
Fiant pilulæ xx. in argent.
This makes a good mass with 4 grs. of tragacanth and ℈ij. of thin conserve.

Quiniæ sulph. ..... gr. 24
Ferri sulph. exsic. ..... gr. 24
Ferri arseniatis. ..... gr. iss.
Ext. nucis vom. ..... gr. vj.
Ferri iodidi. ..... gr. 48
Fiant pilulæ xxiv. Varn. c. tolu.

Ferri iodidi. ..... gr. 72
Sulph. præcip. ..... gr. 48
Ferri arseniat. ..... gr. i.
Ext. gent. ..... q.s.
Fiant pilulæ xxiv.

These combinations are likely to prove troublesome. The iodide of iron (in very good condition, *i.e.*, recently prepared) should be powdered in a warm mortar, the other ingredients added, together with 6 or 8 grains of ext. gent.; the whole is to be vigorously worked together until it becomes plastic, rolled quickly, varnished, and inclosed in a bottle. It is rather remarkable that so little extract suffices for a mass, which from the formula appears to have no adhesive component.

If ferri sulph., zinci sulph., or sodæ carb. are ordered in pills, the following dried equivalents may be used :—

Ferri sulph. exsic. ..... 5=8
Zinci sulph. exsic. ..... 5=8
Sodæ carb. exsic. ..... 7=19

This last is more easily made by heating the bicarbonate than the carbonate.

For sodæ carb. exsicc. use soap as an excipient.

FERRI SULPHAS.—Glycerin and tragacanth jelly is the best excipient for pills containing aloes and ferri sulphas exsicc. or cryst.

FERRI ET QUINIÆ CITRAS.—Good pills, which keep their shape and do not deliquesce, can be made by using unguentum resinæ as an excipient. Some of the makers of scale preparations supply a specially-prepared citrate of iron and quinine for pills, made without ammonia. Pills made with this are more easily kept, but it would not be legitimate to use the preparation in ordinary dispensing.

FERRI BROMIDUM.—The Société de Pharmacie de Paris recommends a hot strong solution of the bromide to be mixed in a dry warm porcelain mortar, with licorice powder and gum arabic in equal parts, sufficient to make a mass. The pills should be rolled in lycopodium, or, better, coated with sugar and gum, and preserved in a well-dried bottle.

---

ERGOTINE.—When too much ergotine is ordered in pills to make a suitable mass, the ergotine should be evaporated to a pilular consistence. Ergotine pills readily absorb moisture, and should be sent out in bottles.

EXT. CANNABIS INDIC. *in Pills.*—Excipient: equal parts of pulv. tragac. co. and calcined magnesia.

FEL BOVINUM.—Good pills can be made by drying the oxgall over a steam bath till it can be powdered. Allow for the loss of weight, and make into pills with mucilage of tragacanth.

GALLIC ACID with ⅛ weight of glycerin.

For GUAIACATE OF LITHIA powder finely, and use S. V.R. ♏ viij. to ʒ i.; a *soft* mass should be made, and slight warmth will be found of advantage.

HYDRARG. C. CRETA must not be vigorously worked in the pill mortar, or mercury separates; thin conserve or a soft extract forms a good excipient.

If prescribed with powders or pill masses which can be used in powder, the hyd. c. cretâ should be carefully triturated with such ingredients first; there is then little chance of mercury being isolated, for instance—

Hydrarg. c. cretâ,
Ext. hyoscy.,
Pulv. pil. coloc. co., āā. ..... gr. iij.
Fiant pilulæ ij. Mitte xxiv.
Pepsin.—½ its weight of glycerin.

PHOSPHORUS.—When phosphorus is ordered to be made into pills, it should be placed in a mortar, and dissolved in a few drops of carbon bisulphide. Ol. theobromæ should be added to the solution, thoroughly mixed, and some absorbent material, such as pulv. tragac. co. or bread-crumb added, and the whole quickly made into a mass and divided into pills, which should be varnished.

Messrs. Allen & Hanbury have stated that the B.P. pil. phosphori seems unlikely to be generally used. They have published the following formula, which they call *Pil. phosphori cum sapone:*

Phosphori. ..... gr. ij.
Carbon. bisulphid. ..... ♏ x. vel q.s.
Solve.
Pulv. saponis dur.,
Pulv. guaiaci resin., ana. ..... gr. xxxv.
Glycerin. ..... gtt. xij.
Pulv. rad. glycyrrh. ..... gr. xij. vel q.s.

Ut fiat massa gr. c. To be divided into pills of the strength required, and varnished or coated in the ordinary way. The mass is of good consistence, easily manipulated, and readily soluble.

A drop of oil of cloves added to the carbon bisulphide is said by Mr. Proctor to lessen its tendency to inflame. Phosphorus pills made with cocoa-butter, as the only excipient, dissolve so readily that the phosphorus causes unpleasant eructations. The addition of a small proportion of Canada balsam remedies this defect.

Phosphorus pills are to be varnished.

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PIL. ALOES ET MYRRHÆ.—The best excipient is a mixture of glycerine 1 part, and treacle 3 parts.—*G. Welborn.*

PIL. HYDRARGYRI.—When this is prescribed with a soft extract the latter should, if possible, be dried or used in powder.

PIL RHEI CO.—The mass of the B.P. may be made up to the full weight with sugar, instead of treacle. This is convenient if the other ingredients of the pill are soft extracts. *Pulv. pil. col. co.* to be treated in the same way.

For PULV. RHEI use proof spirit or tinct. rhei (♏ i. to 3 grains); a *soft* mass should be made and rolled quickly, otherwise it is troublesome. A similar precaution is necessary for pepsin. porci (excipient, glycerin ♏ i. to 2 grains).

Only 24 pills should be made at once, or the mass assumes a leathery condition, and has to be thrown away.

When any of the substances previously referred to forms a large proportion of a pill mass, the excipient mentioned should be used in due proportion, thus :—

Pulv. rhei. ..... ʒ i.
P. saponis dur. ..... ʒ i.
Pulv. ipecac. ..... gr. vi.
Fiant pilulæ xxiv.
This makes a good mass with tinct. rhei ♏ 25.

QUININE.—Glycerin and conf. rosæ.

QUININE SULPHATE.—The best excipient for quinine sulphate is tartaric acid (2 grains to 20 grains quinine) with one drop of water. Glycerin and tragacanth answer well, but make larger pills, and confection of hips makes them larger.

Sulphate of quinine may be best made into pills by the following process, given by Mr. H. P. Reynolds in the *American Journal of Pharmacy:*

Sulphate of quinine. ..... 600 grains
Tartaric acid. ..... 100 grains
Glycerin. ..... 75 minims

Rub the quinine and the acid together, in a mortar, to a fine powder till no appearance of the crystals remains, add the glycerin and continue the trituration till the powder becomes adherent, when it should be beaten into the proper form for handling, and divided into the requisite number of pills. The mass is firm, solid, rolls well, does not set for some hours. The pills will be found quite small for their weight, and very white if rolled in starch powder; and, however dry or old they may become, they remain perfectly soluble.

In the presence of much SOAP, water is better avoided. S.V.R., when admissible, forms a less slippery and more controllable mass: it should be made soft.

TANNIC ACID with ¼ weight of glycerin. If these pills be made with mucilage, they crack and crumble, as soon as dry, and fall to powder.

### EXCIPIENTS.

BREAD-CRUMB is a useful excipient when balsam of Peru is ordered, or when the ingredients are too moist to make a good mass. Two grains of this will make a mass with 1 grain carbolic acid, or 1 minim creasote. If the bread is crumbly a very little glycerin and tragacanth excipient may be added.

CALCIUM PHOSPHATE possesses in a very remarkable degree the property giving a greasy substance, such as lard or mercurial ointment, a good pilular consistence, when added in comparatively small quantity.

CONFECTION OF ROSES and CONFECTION OF HIPS increase the bulk of pills more than is liked nowadays.

DECOCTUM ALOES CO., is sometimes useful where a considerable quantity of oil has to be combined with a rather soft mass.

GLYCERIN alone is not a good excipient, as pills containing it are liable to absorb moisture, and do not take silver well.

GLYCERIN, 1 part, with treacle, 3 parts, is an excellent excipient for pil. aloes et myrrhæ.

MUCILAGE.—Pills made with mucilage become very hard in course of time.

SPIRIT should not be used when there is much resin in the pill, and pills made with it should be rolled off very quickly or they will crumble.

TRAGACANTH gives solidity and elasticity to a mass a little too soft, but if too much be added the pills become so elastic that it is almost impossible to round them with the finisher.

TRAGACANTH AND GLYCERIN is the best excipient for salts and metallic oxides, such as potassium bromide and bismuth subnitrate. The mass should be well kneaded, or more of the excipient will be used than is really necessary.

Tragacanth excipient for pills.

| | |
|---|---|
| Pulv. tragac. | ℥ i. |
| Glycerin. | ℥ iv. |

Mix.

Or,

| | |
|---|---|
| Tragacanth in powder. | ½ oz. |
| Glycerine and water, of each. | 2¼ oz. |
| Oil of pimento. | 5 drops |

*G. Welborn.*

UNGUENTUM RESINÆ will make good pills of ferri et quiniæ citras.

WAX IN SMALL SHAVINGS, with a little powdered soap where not incompatible, is the best excipient for essential oils, carbolic acid, creasote, etc.

### PILL COATING.

ALBUMEN AND SUGAR.—Pills sufficiently firm and dry should be rolled between the finger and thumb with sufficient white of egg to give them a thin coating. They should then be placed with finely powdered white sugar in a suitable vessel and rotated. The coating looks well and has a pleasant taste.

FRENCH CHALK AND SUGAR.—The pills are moistened with syrup or mucilage or a mixture of the two, by shaking in a covered pot. They are then transferred to a box containing powdered French chalk or a mixture of French chalk and sugar and are well shaken, and again transferred to a warm pill tray and kept rapidly rotating until dry and smooth. The operation takes but little time.

GELATIN.—Dr. Symes recommends the following formula:—French sheet gelatin, 4 parts; water, 16 parts; glycerin, 1 part; melt with the aid of heat. A board is required into which pins have been pressed so that the points project some distance, and it is a saving of time to have a corresponding board with a hemispherical depression opposite each pin. The points of the pins are slightly greased, a pill placed on each, any scum is removed from the solution kept warm, the pills are immersed, and a rotary motion with occasional inversion is kept up until the gelatine sets.

SUGAR.—By practice pills may be beautifully coated with sugar by the following process:—Pills well dried on the surface are placed in a tinned copper bowl with a flat bottom, or an enamelled iron dish, the surface of which has been moistened with syrup or syrup and gum. They are then rotated and gently heated, very finely powdered sugar being dusted on, and the motion kept up till a perfectly dry, hard, and whitish coating is obtained, the operation being repeated if necessary. The first attempt is generally a failure, but practice is the only secret.—*Dr. Symes.*

TOLU AND FRENCH CHALK.—This was introduced by Dr. Symes in 1860. The resin left after making syrup of tolu is dissolved in ether sp. gr. .717 to .720. The pills are rolled in this, and while still moist are transferred to a box containing finely powdered French chalk, then turned into a warm pill tray and kept rotating for a short time. Finally polish with slight pressure under the pill finisher. The result is a steel-gray smooth coating.

TRAGACANTH AND SUGAR.—Recommeuded by M. Callaud for pills containing essential oils. Mix 1 part of powdered tragacanth with 2 of water; press the mixture through muslin, add 20 parts powdered sugar of milk and dry in a thin layer on a porcelain slab. Finally reduce it to a very fine powder. Dr. Symes says that this is not easily done, but the success of the coating depends on the fineness of the powder. The pills are moistened with water and rolled in the powder, a rotary motion being kept up till they are dry.

In the September number of the American *Journal of Pharmacy*, Mr. R. H. Dimock publishes the results of some experiments in coating pills for dispensing purposes. The best coating he has tried is made by dissolving 6 drachms of Cox's gelatin and 1 drachm of granulated gum arabic in 14 drachms of acetic acid No. 8, with the aid of a water bath; add 1 oz. of spirit of nitrous ether, and 5 minims of oil of gaultheria, and mix. Make the mass a little softer than usual; use as little powder as possible in rolling out; when the pipe is nearly long enough for cutting, lay in front of it a thread long enough to reach over the sides of the machine, or cut a slit along the pipe, and lay the thread in this. Roll to full length, and cut off the pills, which with practice can all be kept strung on the thread; take hold of each end of the thread; shake off any powder adhering to the pills, and dip them into the coating solution. Twirl the thread to throw off all excess of coating, and hang up to dry by pinning the opposite ends of the thread to the sides of a box. It requires some practice to secure good and speedy results by this method.

VARNISH FOR PILLS.

| | |
|---|---|
| Sandarach. | ℥ i. |
| Ether. | ℥ iij. |

J. Whitfield, F.C.S., recommends the following varnish for pill-coating:—

| | |
|---|---|
| Common amber resin. | 1 to 2 drachms |
| Spirit of turpentine. | 1 drachm |
| Absolute alcohol to. | 1 oz. |

20 minims of oil of geranium or other essential oil may be added. The pills should be as hard as possible.

### EMULSIONS.

Emulsions are made in several manners, as, for example, by making a soap, as when an alkali is added to a fixed oil; by suspending a resinous substance in a mucilaginous liquid, as in copaiba emulsion, or in mistura ammoniaci and mistura guaiaci of the Pharmacopœia. By yolk of egg, as with turpentine or castor oil.

The readiest method of producing an emulsion of oils is to triturate 1 part of powdered gum arabic in a mortar with 2 parts of oil, add at one time 1½ part of water and triturate, when, after a few turns of the pestle, the whole

is emulsified. The rest of the water may be added by degrees. At least 3 parts of powdered gum are required for 8 parts of an essential oil and 2 parts for the same of fixed oils and balsams.

If we shake up a fixed oil with $H_2O$, we break it up into a multitude of minute particles, so that the entire mixture has a milky appearance, but if allowed to stand the oil speedily separates.

This is owing to two causes—the lesser specific gravity of the oil and the want of adhesion between its particles and those of the water. The art of making emulsions consists in finding and introducing some body to overcome this antagonism, so that when at rest the mixture shall not separate. The emulsifying media vary, but the principle of action is the same in every case. The object is to break up the substance to be emulsified into a multitude of minute particles, and to inclose each of these in a coating of the emulsifying agent. Examples:—

I.

| | |
|---|---|
| Bals. copaib | ʒ vi. |
| Pulv. acaciæ | ʒ iij. |
| Sp. æth. nit. | ʒ ij. |
| Aquæ ad | ℥ vi. |

II.

| | |
|---|---|
| Ol. amygdal. dulc | ʒ iv. |
| Liq. potassæ | ʒ i. |
| Vin. ipecac | ʒ i. |
| Aquæ ad | ℥ iv. |

Make a thick mucilage with the gum and a little water, then add with constant trituration, alternately, first a little of the oleo-resin, then a little water, and so on till the whole of the copaiba is emulsified; place in a bottle, add more water, and, lastly, the sp. æth. nit. By such procedure the oleo-resin is minutely divided, and each particle coated with mucilage. If the mucilage were added to the copaiba, or even the whole of the copaiba added at once to the mucilage, a different result would be effected. The copaiba would doubtless be broken up, but instead of being coated by, it would form the covering of, particles of mucilage, and on standing would quickly separate.

Balsam Peru may be emulsified with yolk of egg.

Tinct. Benzoin may be emulsified with yolk of egg or mucilage.

Balsamum Tolutanum.

| Dissolve: | Parts. |
|---|---|
| Balsam of tolu | 2 |
| Alcohol 90° | 10 |
| Tincture of quillaia | 10 |
| Water | 78 |

*Société de Pharmacie de Paris.*

Huile de Cade, Oleum Cadinum—Juniper Tar Oil.—The Société de Pharmacie de Paris directs that this should be prepared like the emulsion of balsam of tolu, which see.

Copaiba.—The Société de Pharmacie de Paris orders this to be made as emulsion of balsam of tolu, which see.

Copaiba Resin.—Rub the resin with one-third its weight of sugar of milk, and about its own weight of pulv. acaciæ, and add the water gradually. Mr. Gerrard recommends the resin to be rubbed with twice its weight of compound powder of almonds until well incorporated, adding the water after the manner of forming an emulsion.

Chloroform is made into an excellent emulsion by using ½ drachm of tincture of quillaia to every 10 minims of chloroform.

Fixed Oils are perfectly emulsified by ½ drachm of the tincture to every ½ oz. of oil with ½ oz. of water. A drachm of ext. filicis liq., turpentine or copaiba may be made into an emulsion with ½ drachm of tincture. It does not answer well with resinous tinctures, as the resulting mixture is not thick enough to prevent a rapid separation of resin.

Spermaceti may be emulsified with yolk of egg after being very finely powdered with S.V.R.

Tinctura Guaiaci Ammoniata.—When ordered in an aqueous mixture about half an ounce or a suitable quantity of water should be poured into the bottle and shaken to wet the whole inner surface. The tincture should then be added and shaken vigorously, and the rest of the water added gradually.

Pix Liquida should be made as the emulsion of balsam of tolu, which see.—*Société de Pharmacie de Paris.*

Tinctura Quillaiæ Saponariæ is thus made:—

| | Parts. |
|---|---|
| Cortex quillaiæ saponariæ | 1 |
| Alcohol 90° | 5 |

Digest in a water-bath for half an hour at a temperature near boiling; then macerate for 48 hours with occasional stirring, and filter. Before powdering the bark it should be carefully freed from all the outside layer; the tincture is then of a pale-yellow color.

The Société de Pharmacie de Paris recommends tinctura quillaiæ for emulsifying substances insoluble in water.

Turpentine.—Genois reports that Castile soap is the best material for making emulsions of turpentine. Put 10 grains of powdered soap for every ounce of turpentine in a round-bottomed mortar, add the turpentine by degrees with constant trituration; transfer the mixture to a bottle, add half an ounce of water and shake vigorously, then add a little more water and shake again. The product is a very white emulsion, which will not separate on the addition of any quantity of water.

Tincture of Quillaia (4 oz. to a pint of rectified spirit, digested three days, and strained) is very useful in making emulsions. According to Mr. Collier linimentum hydrargyri P.B. can be made into a very satisfactory preparation by the following formula:—

| | |
|---|---|
| Lin. camph. | ʒ i. |
| Tinct. quillaiæ | ʒ iij. |
| Liq. ammon. fort. | ʒ ii. ♏ 41. |
| Aquæ, ad | ℥ v. |
| Ung. hydrarg. | ʒ i. |

*(To be Continued.)*

**New Method of Preparing Hydrobromic and Hydriodic Acids.**—Mr. G. Bruylants has developed a new method of preparing the above-named acids from the known fact that iodine and bromine, at ordinary temperatures, associate themselves with certain organic bodies, and are again liberated from the latter, on heating, in form of hydracids. He chooses the *essential oil of copaiva* as the medium for this purpose. This consists of a hydrocarbon, of the nature of a terpene, having the formula $3C_5H_8$ or $4C_5H_8$ and boiling at 250–255° C.

His process is as follows: Into a tubulated retort provided with a well-cooled condenser, directed obliquely upwards, and having a capacity of 500 cc. (1 quart), about 60 grams (2 oz.) of essential oil of copaiva are introduced. The end of the condenser is connected with a drying jar, in which the gas enters at the bottom, passes through a pellet of asbestos and escapes from the upper tubulure [when it may be conducted into water]. At the beginning of the operation, the oil is warmed, and very gradually 20 grams of iodine are added. The heat is then slightly raised, when an abundant supply of gas commences to be given off; as soon as this becomes slower, the retort is allowed to cool a little, and more iodine is introduced, until 150 grams are added. The yield is 145 to 150 grams of hydriodic acid.

Hydrobromic acid may be prepared in the same manner, only the bromine must be added *very carefully*, in drops, from a stoppered globe-funnel inserted in the tubulure of the retort. 60 grams of the oil and 150 grams of bromine furnished 142 grams of hydrobromic acid.—*Journ. de Pharm. d'Anv.*, 1879, 343.

**The Glucoside of Licorice.**—(A. Sestini.) An aqueous extract of the root, on being evaporated to dryness after treatment with animal charcoal, yields a product from which absolute alcohol extracts asparagin. The

residue dissolves in dilute alcohol, and, when burnt, leaves an ash, containing lime, alkalies, and a trace of sulphuric acid. From these results it is evident that glycyrrhizin does not exist in the root in the free state, but in combination with bases, chiefly lime. An examination of the commercial extract, or "licorice," shows that it contains free glycyrrhizin in small quantity, liberated, apparently, from its combination by the acids formed during the evaporation of the juice. Roussin (*Jour. Pharm.*, 1875) imagined that the glycyrrhizin existed in the root as an ammonium compound containing 0.14 per cent nitrogen; but, as the author points out, the method by which he obtained this compound (precipitating the glucoside with sulphuric acid, and treating it first with alcohol and ether, and then with an alcoholic solution of ammonia), affords no evidence that it existed in the root as such, and, moreover, it is not very probable that the substance obtained by Roussin is a definite compound, as it would contain 26 or 27 molecules of glycyrrhizin to one of ammonia.

The glucoside dissolves in dilute potash solution, and is precipitated again unaltered by acids, but the potassium compound formed could not be isolated. Better success attended the attempts to prepare the calcium and barium compounds.

The ordinary method of preparing glycyrrhizin by exhausting the root with water and precipitating with sulphuric acid, gives very unsatisfactory results, as the product is small and highly colored, and there is great difficulty in separating the adherent sulphuric acid. The author prefers to exhaust the root four or five times successively with boiling water and a little milk of lime, and to precipitate the concentrated extract with acetic acid. The brownish, gelatinous precipitate, after being washed with water, is dissolved in alcohol of 50%, decolorized by animal charcoal, and evaporated on the water-bath until the alcohol is expelled. On cooling, it solidifies to a gelatinous mass, which is dissolved in alcohol, mixed with twice its volume of ether, filtered, and evaporated. The gelatinous glycyrrhizin is then pressed and dried over sulphuric acid.

The author regards the crystalline substance obtained by Habermann (*Pharm. Journ.*, before, p. 46) as an alteration product.

In order to determine the amount of glycyrrhizin in the root, it is extracted eight times successively with boiling water rendered alkaline by calcium hydrate, and the solution concentrated to a syrup is precipitated with 10 per cent acetic acid, which has been previously saturated with glycyrrhizin, as is also the dilute acid (2 per cent), and water used for washing. The precipitated glycyrrhizin is then dissolved in alcohol, and the solution evaporated after treatment with animal charcoal. In this way the fresh root containing 48 per cent water yields 3.271 per cent glycyrrhizin, or 6.318 on the dry root.—*Gaz. Chim. Ital.* and *Pharm. Journ.*, Oct. 25th.

**How to Gargle the Throat.**—Dr. Löwenburg recommends the following method of gargling the naso-pharyngeal cavity. The patient inclines the head horizontally backward, and performs movements which we may call "quasi-deglutition," not including the last portion of this physiological action, definite swallowing. The liquid is passed much higher behind the soft palate than the ordinary method of gargling will permit. Some persons succeed so well in this manœuvre that they are able to eject by the nose the liquid which has been received by the mouth. Moreover, these rapid muscular contractions completely detach the abnormal secretions, which can then be easily expelled, and the greatest possible relief is thus given to the patient. Another method is to fill the mouth with the tongue; this confines the gargle to the pharynx. The head should then be bowed in a forward direction until the top of the cranium is its lowest portion. In this position the gargle will not only wash the roof of the pharynx—giving a sort of sitz-bath, as it were—but if the patient have caught the trick, will flow forward through the nose.—*Boston Med. and Surg. Jour.*

**Gum Euphorbium as a Coating for Submerged Iron.**—Attention is called by *Iron* to the value of the gum euphorbium for coating iron exposed to the action of sea-water. It not only, by its poisonous properties, prevents the adhesion of marine animals, but also keeps the iron from rusting.—*Pharm. Journ. and Trans.*

**Sugar from Sorghum.**—Dr. Collyer, chemist of the Agricultural Department, is confident that one-tenth of the corn acreage of Illinois would suffice to raise all the sugar used in the United States, if devoted to sorghum of the variety best suited to the latitude; allowing practical results to reach only 50 per cent of those obtained in his most favorable experiments. The cost of the raw sugar, he thinks, should not exceed three cents a pound. The early amber cane is the species best suited to Illinois. Commissioner Le Duc, on returning from a tour of inspection in the West, reported that the most promising results have already been obtained. He visited one manufactory in Illinois, where 43,000 pounds of sorghum sugar were made last season, equal in every respect to the best product of the sugar cane; and this enterprise has been carried on under exceptional difficulties. He visited or received reports from many other localities to which he had sent sorghum seeds, all speaking in the most favorable terms of the prospects.—*Scien. Amer.*

**Sea-Sickness.**—Dr. Geo. M. Beard, during a recent trip to Europe, experimented somewhat in the treatment of sea-sickness, and found that large doses of the bromides —of sodium preferably—with caffein, and hypodermic doses of sulphate of atropia, were effectual means of controlling the trouble. Bromides to the extent of 30, 60, or 90 grains daily, begun two or three days before sailing and continued while at sea, deprived sea-sickness of one-half of its terrors, and in that respect verified the claims made by Dr. F. D. Lente for the same remedy.—*Medical Record.*

**Whooping Cough.**—Dr. J. J. Caldwell's mode of treating this disease is to place a steam-atomizer in a position on a table before the patient, charged with the following mixture:

℞ Extracti belladonnæ fl. .....gtt. vi.–xij.
Ammonii bromidi..... .....ʒi.
Potassii bromidi.....ʒij.
Aquæ destillatæ.....fl. ℥ ij.

The spray is rapidly carried over into the face, mouth, and lungs of the child, and applied ten to fifteen minutes, until the pupils are dilated by the effects of the belladonna mixture. The applications are made morning, noon, and bedtime. This has, it is said, cut short the spasmodic cough within two or three days uniformly, and almost to a certainty.—*Br. Med. Jour.*

**Concerning Poisonous Mushrooms.**—Julius A. Panner, Jr., says, in the course of a paper on this topic, published in the *Boston Med. and Surg. Jour.*: The theory may be thus briefly stated: the poisonous and non-poisonous fungi, under chemical tests, show nearly identical constituents; for this and other reasons it has been said that mushrooms depend for their noxious or innoxious qualities on the varying quantity of alkali in their composition. Therefore, could the edible variety secrete sufficient alkaline matter, we should find it poisonous, or fungi might be combined so as to destroy the harmony that made them harmless, and thus become dangerous.

Now I have carefully tested these theories for five successive seasons: have eaten every variety of the edible mushroom from widely separated localities and under diverse conditions of growth; have propagated them, and mixed the spawn so as to produce new forms of the same plant. Then, to test the question further, I have also made many mixed stews of little known and unrelated species of fungi, including what is called the edible variety, and having first found each safe isolated, have eaten them in combination without harm. By these experiments have I not proved, on my own person, that the same laws obtain with fungi as govern all other articles of diet? You cannot make a noxious dish out of innoxious elements

You cannot pluck food and poison from the same plant. There are not a thousand Agaricini, but only seven hundred. There are about a thousand non-microscopic fungi. Of these the majority are non-esculent, from being tough, coriaceous, woody, bitter, shiny, or repellent. The next numerous division is that of the esculents, while there are no authentic cases of fatal poisoning save from four varieties of the Amanitæ.

**Anæsthesia at St. Bartholomew's.**—In this hospital, adult patients are not chloroformed, but are anæsthetized with a mixture of ether and nitrous oxide. It is claimed that this mixture works more quickly, and with less discomfort to the patient than pure ether. The anæsthetic is administered with an inhaler which consists of a mouthpiece, connected by a rubber tube with a reservoir which contains the anæsthetic, and is arranged so that any desired portion of air can be admitted. Chloroform is given, however, to patients under fourteen years of age, and it is not considered dangerous to children.—JOHN B. WHEELER in the *Boston Med. and Surg. Jour.*

**Treatment of Rosacea.**—MR. BROULT gives the treatment of this affection as practised by M. Hillariet for the last eight years. In the morning he causes the face to be washed with very warm water, or a vapor douche to be directed against the same, for four or five days in succession. In the evening the face is bathed with the following solution: distilled water, 250; sublimed sulphur, 30; and camphorated alcohol, 8, 10, 12, or 15 grams. In some cases a little ether is added with benefit. The light deposit of sulphur and camphor is left upon the skin until morning, when it is washed off, and the following ointment is applied. To soften the skin: lard, 30; oxide of zinc, 2 or 3 grams. Improvement is noticeable on the fourth day in a diminution of the pimples and the redness, but treatment is continued for two or three months, and until complete disappearance of the redness. Subsequently the skin should be washed twice a day in warm water.—*Boston Med. and Surg. Jour.* from the *Ann. de Dermat. et de Syph.*

**Iodic Acid as a Test for Morphia.**—J. CARTER BELL draws attention to the unsatisfactory character of this test. It is usually quoted in text-books of analysis and of toxicology as an important test for morphia. For instance, *Taylor*, in his *Medical Jurisprudence*, says: "A solution of iodic acid, if mixed with its volume of sulphide of carbon, should not change the color of the latter; on adding a small quantity of these mixed liquids to morphia or its salts, either solid or in solution, the iodine is separated from the iodic acid and dissolved by the sulphide, which sinks to the bottom, acquiring a pink or red color, varying in its intensity according to the quantity of morphia present. This reaction distinguishes morphia from the other alkaloids which do not decompose iodic acid." Fresenius in his *Qualitative Analysis* says: "As other nitrogenous bodies (albumen, casein, fibrin), likewise reduce iodic acid, this reaction has only a relative value, however, if *ammonia* is added after the iodic acid; the fluid becomes colorless if the separation of iodine has been caused by other substances, whilst the coloration becomes much more intense if it is owing to the presence of morphia."

The author says that these statements do not agree with his experience. He finds that other substances, such as ipecac and guaiac, will produce the pink color; and also, that ammonia is *not* able to distinguish between the pink color of the morphia and that produced by other substances.

This statement may be easily verified by putting into a test tube 2 cc. of a solution of iodic acid (one part of the acid to 15 of water), and 2 cc. of bisulphide of carbon; to this mixture is added a milligram of hydrochlorate of morphine, and, on shaking, the beautiful pink color is communicated to the bisulphide of carbon; on adding 5 drops of ammonia, the color disappears. A few drops of ipecacuanha wine, in the place of the morphia, will produce the same result. Such a doubtful test ought to be banished from all toxicological works; or, if mentioned, should be qualified by this statement—that if no pink color is produced, the absence of morphia may be presumed.—*The Analyst.*

**Mylius' Method of Opium Assay.**—MR. E. MYLIUS proposes some improvements to Flückiger's method which we will not quote here, and describes his improved process as follows:

8 grams of air-dry opium are macerated for 12 hours with 80 gm. of water. [The 80 gm. of water extract from the opium, as a close average, 5 gm. of soluble matter.] The mixture is filtered, and 42.5 gm. of the filtrate, corresponding to 4 gm. of the opium, are mixed in a flask of the capacity of 100 cc. with 12 gm. of alcohol (sp. gr. 0.830), 10 gm. of ether (sp. gr. 0.728) and 1.5 gm. of water of ammonia (sp. gr. 0.960), and set aside for 24 hours. At the end of this time, the crystals of morphia are transferred to a filter of the diameter of 3–4 centimetres. According to the shape of the flask, the crystals are detached either by the aid of a glass-rod or by means of a small piece of brass or platinum-foil briskly agitated in the flask. The latter is rinsed with portion of the filtrate until all the crystals are on the filter. They are then washed with 10 gm. of a mixture of equal volumes of ether and alcohol, the filter laid on filtering paper and gently pressed, in order to squeeze out the excess of mother-water. After drying the filter at 100° C. for about half an hour, it is allowed to lie exposed to the air for another half an hour, whereby it absorbs the natural amount of moisture from the air, and then weighed. The crystals of morphia are now removed by means of a brush and snapping the back of the filter with the finger, and the filter weighed again. To the loss of weight, representing the morphia in crystals, the figure 0.088 is now added, as a correction for the small amount of morphia held in solution by the mother-water, and the whole calculated for percentage, remembering that the 42.5 gm. of filtrate originally taken represent 4 gm. of the opium.—From *Arch. d. Pharm.*, Oct., 1879, 322.

**Austrian Vaseline.**—GUSTAV WAGEMANN, of Vienna, has put on the market a species of "vaseline" which appears in form of a yellowish-*white* transparent mass of the consistence of soft lard. When agitated with water it yields an almost milky white mixture. It does not retain as much water as lard can take up, but 18% may be incorporated into it by agitation. After adding 1 part of powdered gum arabic, the amount of water may be increased to 23%.

The consistence may be made firmer by the addition of paraffin: 1 part of the latter and 3 parts of vaseline yielding on cooling, and after thorough mixing, a mass of the consistence of solid lard. In winter, the proportions may be altered to 1:4. This mixture may be denominated *Vaselina paraffinata*, and forms an excellent basis for pomade, as it does not become rancid.

1. *White Vaseline Pomade.*

| | |
|---|---|
| Vaseline, paraffined | 1,000 parts. |
| Rose water | 80 " |
| Oil of bergamot | 10 " |
| " citronella | 1.5 " |
| Musk mixture | 3 " |

Mix by agitation.

[N. B. *Musk Mixture* (Hager, Pharm. Prax. I., 599) consists of:

| | |
|---|---|
| Oil of bergamot | 100 parts. |
| " lemon | 50 " |
| " citronella | 25 " |

Mix and add to them

| | |
|---|---|
| Musk | 0.2 " |

previously triturated with

| | |
|---|---|
| Absolute alcohol | 10 " |

After a few days, filter through cotton.]

2. *Red Vaseline Pomade.*

| | |
|---|---|
| "Purified vaseline" | 850 parts. |
| Yellow wax | 140 " |
| Alkanet root | 5 " |

Digest on a water-bath for a few hours, strain, and when the mixture begins to cool, mix it by agitation with

Rose water.....60 parts.
Oil of bergamot.....10 "
Musk mixture..... 3 "

The "purified" or "Austrian Vaseline" is sold by Eugen Dieterich, of Dresden (agent for the whole of Germany), in parchment bags, containing ½ kilo, at the rate of 4 marks (about 96 cents) per kilo.—*Pharm. Centralh.*, 1879, No. 40.

**Solubility of Gun-Cotton in various Liquids.**—BAROY has experimented with various other solvents besides a mixture of alcohol and ether, to produce a suitable solution of gun-cotton for photographic purposes.

*Acetone*, a very volatile liquid [boils at 56° C.], and soluble in all proportions of water, is one of the best known solvents of gun-cotton. It shares with the usual ether-alcohol the property that it dissolves the hot-prepared almost pulverulent variety of gun-cotton more readily than that prepared at low temperatures. On pouring a solution of gun-cotton in acetone into water, the gun-cotton is precipitated in form of large white flakes, which do not coalesce, and may be easily washed. After drying, 3 grams of this gun-cotton occupy a space of almost 200 cc. It is not necessary to use absolutely pure acetone; if the latter, on being poured into water, does not produce a milkiness, and does not reduce silver salts, it is sufficiently pure.

Methylic Alcohol is another good solvent. It is also soluble in all proportions in water, and has no effect on silver salts. A solution of gun-cotton in this menstruum is more gelatinous than that produced with acetone. On pouring it rapidly into water, a compact gelatinous mass is produced which can be washed only with difficulty. If, however, the solution is poured into cold water in a very thin stream, a very voluminous mass results (25 gm. occupy the space of 2 litres) which may be easily washed. On drying, the mass becomes horny, semi-transparent, and amber-colored. It is easily soluble in ether-alcohol.

*Glacial Acetic Acid* is also a good solvent of gun-cotton. The solution poured into water behaves like that made with acetone. On drying, every trace of acetic acid volatilizes.—*Polyt. Notizbl.* and *Pharm. Z. f. Russl.*

**Infusion of the Stem of the Sunflower as a Remedy in Intermittent Fever.**—P. FILATOW, of Ssaransk (Gouvernement: Pensa; Russia) has for 3 years frequently used an infusion of the sunflower (*Helianthus annuus* L.) in intermittent fever, and has, in the majority of cases, obtained as good results as could have been obtained from quinine. The infusion is prepared by cutting the *stem* of the sunflower (fresh or dry) into small pieces, and macerating it for 3 or 4 days with common cognac, when it acquires the color of sherry, and the distinctive taste of the drug. The dose for adults is a tablespoonful 3 times a day, and it may be administered before or during the paroxysm. In recent cases recovery took place already after 1 to 3 days; in more chronic cases, the medicine had to be given for one week, and occasionally even longer. Only a few cases resisted the remedy entirely, and quinine had to be resorted to; but in several instances even the latter failed to effect a cure.—*St. Petersb. Med. Wochensch.* and *Pharm. Z. f. Russl.*

**Precaution in Administering Iron.**—DR. T. GRAINGER STEWART has discovered that when, during the administration of the tincture of chloride of iron, functional derangements of the stomach and liver arise, with furred tongue, impaired appetite, headache, etc., these symptoms rapidly disappear upon adding one-half grain of the chloride of amonium to each minim of the tincture. He finds this combination notably useful in cases of heart disease accompanied by anæmia and debility.

**Ergot in Catarrhal Affections.**—Ergot is now recommended as a local remedy in catarrhal affections of the eye and throat. In chronic conjunctivitis the strength s 65 of the extract to 32 of water, a little glycerin being added to preserve the drug. In throat affections, it forms an excellent element in a gargle, or may be applied in combination with tincture of iodine. In nasal catarrh, it may be applied by means of gelatin bougies.

**Preservation of Dissecting Material in London.**—*The British Medical Journal* of October 11th gives an interesting sketch of the methods of the preservation of subjects in the London dissecting rooms. At Guy's the subjects are injected by the Howse method, with glycerin, and arsenic, but are afterwards put into a carbolic acid solution. At St. Mary's, the injecting material is composed of vermilion, arsenic, plaster-of-Paris, and size. At Middlesex Hospital, arsenic in a solution of carbonate of potassium was used, the subjects being afterward wrapped in carbolic acid cloths. At University College, carbolic acid in glycerin is the injecting material. In other schools, chloride of zinc, bichloride of mercury, arsenite of sodium, arsenic, creasote and soda, etc., etc., are used in various combinations. Not one of these schools, however, makes use of a solution of chloral, as first used by Dr. Keen, of Philadelphia. This is an economical and perfectly satisfactory method of preservation. Under its influence, subjects not only remain sweet for weeks, even in warm weather, but the muscular tissue retains its normal flexibility and brightness of color.

**The Alum Industry of France.**—The principal chemical factories for the production of alum, sulphate of alumina, and sulphate of iron, in France, numbering about 10, are grouped around Laon, La Tere, and Noyon. Others are met with at Lyons, Paris, Fontainebleau, and Montpellier. They number 14 in all, and the value of the plant is estimated at 6,000,000 f. They produce 180,000 tons of alum, sulphate of alumina, and sulphate of iron. These establishments use 70,000 tons of raw materials extracted from the soil, or furnished by French industry, and supply to the railways and canals 40,000 tons to transport. They pay, directly or indirectly, salaries in a sum of 1,500,000 f. to 1,200 working people. These factories produce annually alum and sulphate of alumina exceeding the national want by 4,000 tons, which finds its outlet in export. It is not necessary to enlarge here on the various industrial uses of alum and sulphate of alumina: paper manufacture, dyeing, and currying are largely dependent on it. The use of sulphate of iron is even more extensive: in dyeing, in the purifying of gas, the polishing of plate glass, the disinfection of fæcal matters, and agricultural operations, it is extensively employed. Even the residues of manufacture are utilized, in the state of the mother liquor or the exhausted ashes, for purifying the sewage-waters of towns, and as a fertilizer for artificial grass lands. All these substances, therefore, are of real and indispensable utility as raw materials for a large number of industries. These facts are set forth in a memorial from the manufacturing chemists, complaining of the competition they meet with from Italy, and they oppose the renewal of the treaty of commerce with that country. The importation of Italian alum has reached 2,000 tons, and the export of French alum dropped to 1,200 tons. In consequence, five of the French chemical factories were closed last year. In 1876, a financial company became proprietors of the alum mines of Tolfa, formerly in the Papal States, which contain natural deposits of alum valued at 2,000,000 f. These operations were aided by the treaty of commerce, which admitted alum at a duty of 5 per cent *ad valorem*, and by introducing large quantities of this Italian alum, they naturally sent down the price of the home production, so that it now fetches in Paris only about 13 f. the 100 kilos. The Italian company is enlarging its capital and operations, and pretends to be able to supply the universe with alum, vessels loaded with 2,500 tons of the mineral have been sent to France to supply new factories being established at Rouen and Avignon. These 2,500 tons of raw materials represent more than 7,000 tons of pure alum, as the mineral is so rich that it yields 300 per cent. This competition, it is alleged, will close many more of the chem-

ical factories, and those making sulphate of iron, as this can only be made cheaply from the aluminous schists of Picardy. What the result of the government commission appointed to take this matter into consideration has been we do not know.—*Chemist and Druggist.*

**Action of Bromine on Phenol or Carbolic Acid.**—It has been hitherto held that, by acting with an excess of bromine on phenol in the cold, tribromphenol is produced, and upon this reaction was based a method for assaying carbolic acid (compare NEW REM., 1876, 174). According to RUDOLPH BENEDICT, however, the substance produced is bromoxy-tribromphenol, that is, in the molecule of phenol: $C_6H_5.OH$, not only do 3 atoms of bromine take the place of 3 atoms of hydrogen in the radical, but the hydrogen of the hydroxyl is likewise replaced by bromine, thus: $C_6Br_5H_2.OBr$. This compound is decomposed on being warmed with alcohol, with elimination of bromine, and formation of tribromphenol: $C_6Br_3H_2.OH$. It is, however, crystallizable, without decomposition, from chloroform or carbon disulphide, and is absolutely insoluble in boiling water, ether, or alkalies. Boiling with fixed alkalies or ammonia does not change it. If heated alone it melts at 118° C., and is partially decomposed.—*Die Chem. Indust.*, 1879, 356.

**Protagon.**—(A. GAMGEE and E. BLANKENHORN.) Decanow, Hoppe-Seyler, and Thudichum have thrown doubt upon the existence of protagon, which Liebreich (*Annalen d. Chem.*, 134, 24–44) discovered in the brain substance, and to which the formula $C_{116}H_{241}N_4O_{33}P$ was attributed. In consequence of this, protagon has since been regarded as a mixture of lecithin and cerebrin, a position which the physical properties of these bodies makes untenable. Further, the authors have prepared large quantities of protagon from the brain of oxen, horses, dogs, by a modified form of Liebreich's method. The analysis led to the adoption of the formula $C_{100}H_{208}N_5P.O_{35}$ for this body. Its physical properties are those attributed to it by Liebreich, *i.e.*, it is a white, non-hygroscopic substance, which may be obtained in the crystalline state by suspending it in alcohol, and heating it for some time at 45°. When heated to 150° it becomes brown, and at 200° it begins to melt, forming a brown syrup. By long-continued boiling with ether it is decomposed.—*Ber. d. Deutsch. Ch. Ges.*, 12, 1229.

**Influence of Light on Chromates mixed with Gums and Carbohydrates.**—(J. M. EDER.) Potassium or ammonium dichromate forms with gelatin, gums, sugar, dextrin, and albumen, a coagulum which is altered by exposure to light. Many qualitative reactions of the coagulums both before and after exposure to light are detailed by the author. The coagulums generally become insoluble in water after being exposed to light; they undergo this change more rapidly when moist than when dry. In the case of gelatin, the chromate is reduced, with formation of chromium chromate, and the insoluble coagulum consists of this body united with unaltered gelatin. The main product of oxidation of the gelatin is *formic acid*, which goes in solution on treatment with water. Sugar forms with chromates a coagulum, which is altered by exposure to light, with production of formic acid (no saccharic or oxalic acid is produced). The coagulum does not become insoluble in water.

The coagulum of gum arabic (and gum tragacanth) is insoluble in water after exposure to light, and contains chromic oxide and meta-gummic acid. The coagulum of albumen is very sensitive to light; after exposure it becomes insoluble in water, and seems to contain some oxidized derivative of albumen, together with chromic oxide.—*Journ. f. pract. Chem.* [2], 19, 294.

**Iron by Hydrogen.**—(H. MOISSAN.) The author finds that many samples of the reduced iron used in pharmacy are mixtures of metallic iron with protoxide and magnetic oxide, which imparts a black color. They also contain sulphur and, in some cases, small quantities of arsenic, (from the sulphuric acid acting on zinc), copper, silica, and soluble salts. In order to obtain a good product, the current of hydrogen should be somewhat rapid and perfectly dry, the temperature uniform, and the passage of the gas should be continued for a considerable length of time.—*Comptes Rend.*, 89, 176.

**Test for Traces of Mercury.**—(ED. TEUBER.) The material, dry and finely powdered, is mixed with well ignited iron filings and a little red lead. The mixture is placed in a crucible upon a layer of red lead and covered with a layer of iron filings. The lid of the crucible is so arranged that all the fumes given off on heating the capsule must impinge upon the bottom of a small gold capsule filled with cold water. Traces of mercury down to 0.0001 grm. may thus be detected.—*Oest. Zeitchr. f. Berg- u. Hüttenwesen.*

**Platinum Black.**—PROF. R. BOETTGER recommends, as the easiest method for producing a highly active platinum black, to add to an aqueous solution of platinum chloride an excess of soda, and afterwards about as much glucose as there was platinum salt. On briskly boiling the mixture for 5 to 10 minutes, a rapid disengagement of carbonic acid gas ensues, and metallic platinum, in form of an extremely fine velvety-black powder is deposited. The supernatant liquid is completely free from every trace of platinum.—*Neueste Erf. und Erfahr.*

**Luting for Joints of Pharmaceutical Stills, etc.**—Mr. THANISCH recommends to apply to the joints pieces of paper, about 2 fingers wide, covered with starch-paste to which ½ of its weight of glycerin has been added. The latter causes the paste to adhere most firmly to the hot metal, while, without it, it would speedily dry up and separate. It is best to apply the strips after the apparatus has already become somewhat warm. When it is desired to remove the strips, they are cut in the direction of the joint, and soaked off by means of water.—*Pharm. Zeit.*

**Reduction of Chloride of Silver.**—According to PROF. R. BOETTGER, of Frankfort-on-the-Maine, the easiest method of reducing chloride of silver, even on the large scale, is by treating it with glucose in presence of soda. Freshly precipitated and thoroughly washed chloride of silver is placed into a porcelain capsule; a quantity of soda solution is added, more than sufficient to combine with the chlorine eliminated by the silver salt, and an amount glucose is then added, about equal to the original weight of the silver salt. The whole being heated to boiling, reduction will commence within a few minutes. When it is completed, the reduced silver appears as a dark-gray fine powder. After thorough washing and drying, it is heated to redness in a porcelain crucible, when it will be obtained in form of a loose, pale-white, spongy mass, and of great purity.—*Neueste Erf. und Erfahr.*, 1879, 570.

**Plaster of Paris.**—Before the establishment of cement mills, plaster was only used by stucco men, and these had generally to prepare it for their own use; the gypsum was never burnt, at least by those who did fine work; the term was "boiled," not "burnt;" the raw gypsum was pounded and sifted, and the water of crystallization was driven off in an open pot or pan, the powder being stirred the while; during which operation it assumed all the appearance of a fluid, owing to the rapid escape of the steam) especially from the lower stratum, which kept the whole mass alive, so that when the surface was disturbed it immediately assumed its own level. When all the water was expelled this peculiarity ceased, the gypsum was given a good heat, so as to make sure of its being thoroughly dried, but not by any means to burn it or let it get red-hot, which was reckoned to spoil it, as if overheated it set too quickly, or merely acted as common lime.

In mixing for use, plaster ought to be added to water, not the water poured on to the powdered plaster. And if any coloring matter be used, such as red ochre, it ought to be first mixed with the water, so as to insure equable distribution; if a hard material be required add alum or

sulphate of sodium (Glauber salts) to the water. These cause the plaster to set with great rapidity, but should it be wished to delay the setting, mix with a weak solution of glue or gelatin. The stucco men use this in order to give time to trim mouldings, etc. For fine work the plaster may be sifted again after being boiled. It may be kept for any length of time, if kept perfectly dry and in a place or vessel where it cannot imbibe moisture from the atmosphere. Should this take place, no boiling or burning will again revive it.—R. J. LECKY in *English Mechanic*.

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PHARMACOGRAPHIA. A History of the Principal Drugs of Vegetable Origin, met with in Great Britain and India. By FRIEDERICH A. FLUECKIGER, PH.D., Professor in the University of Strasburg, etc., and DANIEL HANBURY, F.R.S., Fellow of the Linnæan and Chemical Societies of London. Second Ed. London: Macmillan & Co., 1879, pp. xx., 803. $5.00.

IT affords us pleasure to announce the appearance of the long-expected new edition of the *Pharmacographia*. Prof. Flückiger has subjected the text of the first edition to a careful revision, incorporating into it results of the investigations and of scientific progress made since 1874. While the list of drugs treated of has only been increased by the addition of a few new ones, the improvements and additions made to the others has enlarged the work by nearly 100 pages. A most useful addition is a biographical and bibliographical appendix, giving information of the older writers, and authorities quoted in the text. The work is of such a high value and importance that it should be on the shelves of every pharmacist.

YEAR-BOOK OF PHARMACY. Comprising Abstracts of Papers relating to Pharmacy, Materia Medica, and Chemistry, contributed to British and Foreign Journals, from July 1st, 1878, to June 30th, 1879. With the Transactions of the British Pharmaceutical Conference at the Sixteenth Annual Meeting, held in Sheffield, August, 1879. London, 1879, 8vo, pp. 567.

THIS volume contains its usual quota of interesting material; 310 pages of which are occupied with abstracts of papers published in various journals. The report of the papers and the discussions thereon which were presented at the meeting of the Conference is none the less valuable for having already appeared in the Journal of the Association. Some of the papers have been reprinted by us already in brief, but those who are interested in the subjects of the papers will often obtain many practical suggestions from the discussions that were not embraced in the papers themselves. The price of the volume (in Great Britain), postage paid, is 10*s*. 6*d*.

ATLAS OF SKIN DISEASES. By LOUIS A. DUHRING, M.D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania, etc. Part VI. Philadelphia: J. B. Lippincott & Co. 1879. $2.50 per part.

THE recently published fasciculus of this atlas contains the description and plates illustrative of pustular syphiloderma, erythema nodosum, seborrhœa (of the face), and eczema papulosum.

This makes seventy-four plates of this series that have appeared, viz.: Eczema (erythematosum), Psoriasis, Lupus (erythematosus), Syphiloderma, Acne Rosacea, Ichthyosis (simplex), Tinea versicolor, Sycosis non-parasitica, Eczema (squamosum), Syphiloderma (erythematosum), Purpura (simplex), Syphiloderma (papulosum et pustulosum), Vitiligo, Alopecia areata, Tinea favosa, Eczema (rubrum), Scabies, Herpes Zoster, Tinea sycosis, Eczema (vesiculosum), and the four first enumerated.

We have already expressed our appreciation of the unusual merits of the work, as regards both plates and text, and can only say that there is no abatement in this respect as the work progresses.

LECTURES ON THE DISEASES OF THE NERVOUS SYSTEM. Delivered at La Salpétrière, by J. M. CHARCOT, Professor, etc. Translated from the Second Edition by GEORGE SIGERSEN, M.D., M.Ch. etc. With illustrations. Philadelphia: Henry C. Lea. 1879. 8vo, pp. 271.

THIS has already appeared in parts in the *Med. News and Library*, now discontinued, and comprises lectures on disorders of nutrition consequent on lesions of the brain and spinal cord, paralysis agitans, and disseminated sclerosis, hysteria, and hystero-epilepsy.

TRANSACTIONS OF THE AMERICAN OTOLOGICAL SOCIETY. Twelfth Annual Meeting. Newport, R. I., July 23d, 1879. Vol. II., Part 3. 8vo, pp. 76.

IN addition to the minutes of the twelfth annual meeting, this fasciculus contains a report upon the Progress of Otology, by Drs. Vermyne and Webster, and reports of the following cases: Menière's Disease, Trephining of Mastoid for Acute Otitis Media, Facial Paralysis due to Ear-Disease, Supernumerary Auricle, and papers on the Pathology of the Temporal Bone, and Uses of Permanganate of Potassa in Chronic Otorrhœa. This publication is always among the most creditable of the Society reports which reach us.

PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES. By GEORGE HENRY FOX, A.M., M.D., etc. Forty-eight colored plates, taken from life. New York: E. B. Treat. $2.00 per part.

PARTS 2, 3, and 4 of this handsome publication have come to hand, embracing text and Artotype plates descriptive of the following diseases: Keloid, Rosacea, Psoriasis (nummulata), Ichthyosis (simplex), Fibroma (pendulum), Varicella, Zoster (pectoralis), Zoster (lumbalis), Eczema (universale), Leucoderma, Chromophytosis, Favus (capitis), Favus (corporis), and Eczema (cruris).

The favorable impression made by the Part I. is in no wise diminished by the appearance of the succeeding numbers, and we can still remark that this is really the first successful effort of which we are aware, to represent by a photographic method the appearances presented by affections of the skin. Heretofore the brims have been so illy defined and the coloring has been so crude that some exercise of the imagination has been needed to appreciate the appearance of the subject of the picture. In this case no such effort is required, the perspective, details, and tinting being, in every respect, satisfactory.

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CRITICA RAZONADA DE LAS CLASSIFICACIONES FARMACOLOGICAS, con indicacion de los fundamentos de la Farmacologia natural, por D. Federico Prats Grau, Socio residente del Colegio de farmacéuticos de Barcelona, etc. Memoria premiada con un plancha de plata etc. 8vo, Barcelona, 1879, pp. 61.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. PLAYFAIR, M.D., F.R.C.P., etc. Third American Edition, Revised and Corrected by the Author. With Notes and Additions by ROBERT P. HARRIS, M.D. With two Plates, and 183 Illustrations. Philadelphia: Henry C. Lea. 1880.

THE author remarks that the second American edition having become exhausted before the corresponding English edition, he has himself undertaken the preparation of a third. The brief time which has elapsed since the second one was issued renders few changes necessary, but a separate chapter devoted to Gastro-Elytrotomy has been inserted, based mainly on the paper on this subject by Dr. Garrigues. Dr. Harris' notes on the second American edition have been freely made use of in this one.

THE STUDENT'S GUIDE TO DISEASES OF THE EYE. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to St. Thomas's Hospital. With 89 Illustrations. Philadelphia: Harry C. Lea, 1880, small 8vo, pp. 369.

IN preparing this very comprehensive, although concisely written manual, the author has wisely omitted any detailed reference to the crude anatomy of the organ or description of its appendages, but devotes his entire space to the consideration of its malformations and diseases, since the former can be found in any of the numerous anatomical text-books. He has arranged his subject as follows: Means of Diagnosis, Clinical Division, Diseases of the Eye in Relation to General Diseases. A hurried inspection of the pages leads us to think that the work is richer in practical suggestions, which would prove valuable to a practitioner as well as a student, than are some of the more pretentious treatises that we have seen. The illustrations are well chosen and the typography is excellent. It strikes us that the addition of a few pages of test-types would not have been amiss.

MODERN HOUSEHOLD MEDICINE. A Guide to the Mode of Recognition and the Rational Treatment (Homœopathic, Hydropathic, Hygienic, and General) of Diseases and Emergencies Incidental to Daily Life. By CHARLES ROBERT FLEURY, M.D., etc. London: E. Gould & Son, 1879, small 8vo, pp. 616.

AS its title indicates, this work is intended for non-professional readers, and its therapeutical instructions are based essentially upon homœopathic theories. The information given is in the main reliable, but we noticed that too little space has been devoted to those matters on which it is desirable that non-professional readers need and desire instruction, and too much, relatively, to matters of treatment which require professional judgment for their proper use, and yet there is too little said, in some such cases, to enable persons who are not physicians to act understandingly in emergencies, and where the time that must intervene before the arrival of a physician is considerable.

THE MATTHEWS CATALOGUE of Carbonated Beverage Apparatus for 1880, just issued, is a handsome exhibit, not only of the extensive line of goods manufactured by this house, but also of the good taste displayed in all the work of the establishment.

PRICES CURRENT. Smith, Doolittle & Smith, 26 Tremont St., Boston, U.S.A., 8vo, pp. 288.

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PARTS 13, 14, and 15 of this work have come to hand, and contain twelve pages of text and ten plates illustrating Acute Miliary Tuberculosis.

NINETY-SEVENTH ANNUAL CATALOGUE OF THE MEDICAL SCHOOL (Boston) OF HARVARD UNIVERSITY. 1879–80.

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**Cinchona in Ceylon.**—A correspondent of the *American Mail and Export Journal* writes: "Cinchona is really going to do wonders for Ceylon. At the end of this year there will be 50,000,000 cinchona trees of all kinds planted out; counting only half as coming to maturity, we have at a low average of prices, 125,000,000 rupees. This year we have exported 370,000 pounds, equal at least to £70,000 in value. Next year we shall send double this quantity and probably keep up the export for some years at a million pounds.

## NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*]

*When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.*

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No. 668.—**Eau d'Hongrie** (Subsc.).

Cooley's Encyclopedia has the following:

Eau d'Hongrie. (Fr.) *Syn.* Hungary water; Aqua Hungarica, Spiritus Rosmarini Compositus, L.; Eau de la Reine d'Hongrie, Fr. A fragrant stimulant and cosmetic. Sweetened with sugar, it is also used as a liquor.

*Prep.* 1. Rosemary tops in blossom, 4 lbs.; fresh sage, ½ lb.; bruised ginger, 2 oz.; rectified spirit, 1½ gall.; water, ½ gall.; macerate for 10 days, add of common salt 3 lbs., and then distil 11 pints.

2. From oil rosemary (genuine), 1½ fl. dr.; oil lavender, ½ dr.; orange flower water, ½ pint; rectified spirit, 1½ pints; mix. Spirit of rosemary (see above) is now commonly sold for it.

No. 669.—**Sparadrap** (O. S.).

This is a word invented by the pharmacists of several centuries ago, to denote a *spread plaster.* It is a compound of spara-, which is usually derived from the Greek σπείρω, to sow, to sprinkle, and the French *drap*, cloth, etc.

No. 670.—**Phytolacca** (M. M.).

The root, leaves, and berries of *Phytolacca decandra* L. are used in medicine. In Europe the technical appellations are: Radix, Herba or Folia, and Baccæ Phytolaccæ, or—Solani racemosi, or—Solani Americani. All these have a rather sharp taste and act as violent purgatives and emetics, for which reason they are used internally to produce emesis, or in rheumatism and dropsy, and externally as irritants and even caustics in malignant sores, either applied alone or in combination with other substances. The root and seeds are used, like mustard, for preparing "sinapisms." The leaves and unripe fruits are used externally against eczema, cancer and callous tumors, and internally in syphilis. The fine red juice of the ripe berries is used in France for coloring wines, and is a common coloring matter used by European confectioners. The young shoots lose, by cooking, all traces of acridity, and are considered in some sections of the country as a very savory vegetable.

No. 671.—**The Mangrove** (R. O.).

The bark of the mangrove tree, *Rhizophora Mangle* L., and also the root, wood, and other parts (more particularly the fruit) are very rich in tannin, for which reason they are used as tanning materials in the West Indies and in South America, as well as in India. The tree attains a height of 30 to 50 feet and forms large forests or thickets on the muddy banks of rivers or the sea shores. It is remarkable for the facility with which its branches, when coming in contact with the ground, strike root, and develop into new stems, which in like manner propagate themselves, thus forming an impenetrable maze sometimes for miles. The bark, *Cortex Mangles*, which is sometimes brought to Europe

and to this country, has been lauded as a remedy in malaria and intermittent fever; besides, it is used for the same purposes for which tannin is useful. We are not aware that any special active principle has been found in the bark.

No. 672.—**Morphia Reactions** (B. H. W., etc.).

We are in receipt of a communication from a club of young pharmacists, who desire us to clear up some difficulties they met with in carrying out certain color-reactions for morphia. The letter fails to detail, with sufficient exactness, the particular difficulty met with, or at least does not permit us to guess where a mistake was committed in the course of the operation. Nevertheless, we take pleasure in answering it, because we think that the following passage, translated from *Flückiger's Pharmaceutische Chemie* (I., 372) covers the ground so completely that they will be able to detect their error themselves:

"In presence of concentrated sulphuric acid, morphia exhibits surprising powers as a reducing agent, for instance upon oxide of silver, hydrated oxide of bismuth, the acids of molybdenum, titanium, vanadium, tungsten, and tin. On triturating the two first-named oxides of their salts with concentrated sulphuric acid, and adding a drop of an aqueous solution of a morphia salt, the latter will be surrounded with a brownish-black zone. Even chloride or nitrate of silver thus treated will show the zone. On preparing solutions of the above-named metallic acids in hot concentrated sulphuric acid, and dropping upon them, after cooling, an aqueous morphia solution, various colors make their appearance, which, in the case of titanic and molybdic acids, will remain recognizable, even if the aqueous solution of the pure alkaloid itself was used. Titanic acid produces a red-brown; molybdic acid a very characteristic, first violet, then finely blue color; tungstic acid produces more of a violet tint. It is remarkable that oxide of mercury, under these circumstances, is not reduced.

"These reactions appear more decisively by inverting the proceeding, namely, by dissolving morphia or one of its salts in concentrated sulphuric acid, and either sprinkling upon the acid solution fragments of the above oxides or acids, or their salts (also chromates and permanganates), or else adding solutions of the metallic acids in concentrated sulphuric acid. The finest tints are produced by molybdic and titanic acids; these are at the same time the most delicate, particularly the latter: the blue color of the molybdate of molybdenum ($Mo_9O_4H_4$) is developed (after the violet) in a few minutes; the intense brown-red to violet color produced by titanic acid, owing to the formation of titanium sesquisulphate ($Ti_2S_3O_{12}$) appears instantly. *A solution of titanic acid in concentrated sulphuric acid is one of the most delicate reactions of morphia.* But oxymorphia, rhusiomorphia, and apomorphia act with equal energy upon titanic acid and the above-mentioned metallic oxides.

"These color-reactions mostly depend on processes of reduction; they may fail to make their appearance if the alkaloid is accompanied by other reducing bodies. On the other hand, the reactions just described *may* be produced by other organic or inorganic oxidizable substances. Hence they are not final proofs for the presence of morphia: yet no *alkaloid*, except codeia and the derivatives of morphia or codeia, behaves in any similar manner. It is not improbable that, in many reactions of morphia, particularly in acid solution, the formation of *rhusiomorphia* (a derivative of morphia produced by strong sulphuric acid, and thus named by Prof. Flückiger) plays a *rôle*. This seems to be confirmed by the fact that morphia, in an *alkaline* solution, exhibits many of these reactions in a much feebler state.

"For instance, if hydrated oxide of bismuth is sprinkled upon a solution of morphia in a little concentrated soda solution, and the whole be dried on the water-bath, the residue will have only a faint yellow color. But this is blackened immediately if a drop of concentrated sulphuric acid is allowed to fall upon the cold mass. On keeping morphia, with soda and oxide of bismuth, for some time on the water-bath, a brown color is only slowly produced. The action of morphia upon oxide of bismuth (also upon ceroso-ceric oxide) is due to the presence of traces of nitric acid. Oxide or sulphate of bismuth, absolutely free from nitric acid, produces under the above circumstances only a grayish-green color, which passes into brownish-black on adding a *trace* of very dilute nitric acid. This reaction is performed most successfully with the officinal subnitrate of bismuth."

No. 673.—**"Unguent. Comp."** (T.).

This correspondent writes: Do you know of any formula for "*Unguent. Comp.*"? A physician in our city writes for the same and only *one* druggist (a member of our College of Pharmacy) has the formula, of which he refuses to give a copy. Is that according to pharmaceutical custom?

Our answer is emphatically: No! The code of ethics of all Colleges of Pharmacy expressly discountenances all secret formulæ between physicians and apothecaries, and stipulates that members of the college, upon whom alone the code of ethics can be legally binding, will, if called upon, communicate to each other the composition of any formula which they may be asked about. Further, while they may be *legally* bound to do so only towards members, they are *morally* bound to act in the same manner towards *all* respectable pharmacists. The iniquity of secret understandings between physician and apothecary, the sole object of which is the systematic drainage of the patient's pockets, has been sufficiently well discussed heretofore, so that nothing further need be said, except perhaps this: that a better moral tone pervades the medical and pharmaceutical professions at the present time than in the past; and that there is good ground to hope for still greater improvement in the future.

No. 674.—**Vaseline Cold Cream** (Corresp.).

Ordinary vaseline will not make a perfectly white cold cream. But in all other respects the following mixture will be very nice and bland:

| | |
|---|---|
| White wax | 1 part |
| Spermaceti | 1 " |
| Vaseline | 10 parts (more or less) |
| Rose-water | 6 " |

Melt the wax and spermaceti at a gentle heat, add the vaseline, and triturate the mixture in a warm mortar briskly, while the rose-water is allowed to drop into it in a very fine stream or in rapid drops. Success depends upon assiduous trituration.

Or, the melted wax, spermaceti, and vaseline may be introduced into a warm porcelain pot, and while it is kept in brisk motion by an egg-beater (the crank and pinion kind is the best), the rose-water is slowly added. It may be perfumed according to individual fancy.

The amount of vaseline may be varied according to the temperature of the season.

No. 675.—**Vaseline Camphor Ice** (Same).

The above mixture will answer for this purpose, merely adding 1 part of camphor to the melted ingredients.

No. 676.—**Druggists' Liquor License on Bitters** (D., Florida.).

The law respecting liquor licenses to be taken out by druggists on bitters or other similar compounds is so worded that the Internal Revenue officers in different sections of the country differ considerably in its interpretation. It would not be safe for us, here at New York, to give you positive advice regarding this matter, for the Florida officers may differ from ours. The safest plan for you is to apply to the assessor of your district, from whom you will obtain all the necessary information.

No. 677.—**Internal Revenue Stamps on "Cough-Mixture"** (R., Texas).

If you call the cough-mixture you sell by a specific name, say for instance, Brown's Cough-Mixture, and you advertise it as such, or have printed labels with this name,

you will have to affix revenue stamps to each vial sold, unless the formula accompanies *each* bottle. It is not enough to have the formula pasted on the stock-bottle. If you, however, label the bottle: "Cough-Mixture, put up by Brown," you *may* sell it without revenue stamps, unless the Internal Revenue officers of your district—as it sometimes happens—interpret the law differently. We must give you the same advice as we gave to other inquirers on this subject, namely, to apply to the assessor of your district for information.

No. 678.—**To fasten Metal on Leather** (Corr.).

Some time ago, the *Industrie-Blätter* contained a notice how to fasten leather on metal. This may answer your purpose. The directions are as follows: "Digest 1 part of coarsely powdered galls with 8 parts of distilled water for about 6 hours, and strain through muslin. Cover 1 part of glue with one 1 part of cold water, and let it stand 24 hours. Then coat the leather with the warm infusion of galls, apply the previously-warmed solution of glue to one side of the metal, previously roughened and warmed, apply it to the leather, press firmly, and allow it to dry in the air." The metal adheres so firmly to the leather that it cannot be detached without tearing the latter.

No. 679.—**Phosphor-Bronze** (J. Sch. & Co.).

We do not know of a firm in this country which makes chemical apparatus, kettles, etc., of phosphor-bronze. Perhaps some of our readers will supply the information. In Germany, the firm of C. Heckmann, 9 Görlitzer Ufer, Berlin, makes a specialty of apparatus of copper, lead, brass, and *phosphor-bronze* for chemical factories.

No. 680.—**Absorbent Cotton as a Filtering Material.**

We are in receipt of a letter from Prof. A. R. LEEDS, of the Stevens Institute of Technology, in the course of which he says:

I note in your journal an important criticism upon the proposed employment of gun-cotton as an Indestructible Filter. In this connection I wish to express a regret that amianthus is not sold in a form resembling cotton-wool, a state to which it might be readily brought by a little preliminary treatment. For most filtrations where destructive solvents are not employed, I have latterly discarded almost entirely the use of paper filters, and have substituted thin wads of the carefully cleansed cotton-wool now extensively used in surgery. Most solutions in water, chloroform, ether, benzole, etc., filter through them almost instantaneously. Where quantitative operations are not intended, the last portions of the filtrate may be squeezed out between the fingers, and the wad thrown back and digested in a fresh portion of the solvent if desirable.

No. 681.—**Loewig's Patent Alumina** (B. & A.).

This substance, which has been recommended as an excellent agent for purifying honey—see NEW REM., 1879, Feb., p. 49—is not kept in stock by any dealer in this country, so far as we have been able to learn. It is manufactured by the firm of Goldschmieden, Lœwig & Co., in Deutsch-Lissa and Dresden—address at either place.

We have described this substance as a damp mass, containing about 10% of anhydrous alumina, prepared by adding to a solution of alumina in soda enough lime to convert the alumina into calcium aluminate, etc. . . . Our correspondent wishes to know what is meant by the expression, "a solution of alumina in soda." The meaning is plain: soda as well as potassa dissolve alumina quite readily. In order to obtain such a solution, the best way perhaps would be the following: Dissolve 4 oz. each of ordinary alum and of carbonate of sodium in 4 pints of hot water, and strain the solutions. Then pour the alum solution, under stirring, gradually into the solution of the carbonate, in a large vessel, and heat the mixture to boiling. This drives off all the carbonic acid gas. Then allow to cool, and pour the whole mixture on a well-wetted muslin strainer. When the liquid ceases to pass, return the precipitate to the dish, thoroughly incorporate it with 8 pints of distilled water, and drain it again on the strainer. Repeat the operation once more, when the alumina will be tolerably free from sulphate of sodium. Of course, by repeating the operation, this salt may be washed out still further. The magma of hydrated alumina now remaining is dissolved in a sufficient amount of caustic soda.

No. 682.—**Purifying Honey** (B. & A.).

In connection with the preceding, we would like to bring to your attention a very neat and useful method of assisting the purification of honey, which we have practiced ourselves with great success.

Pour the honey into a perfectly clean cylindrical vessel with straight sides, rather narrow, and having a small lip at the open margin, and heat the vessel on a water-bath. When the contents is hot, pour enough honey into the vessel to fill it to within about 1 inch of the edge, and allow it to remain at rest in the water-bath, at a moderate heat, for about one hour. During this time, most of the impurities will rise to the top, while some others may sink to the bottom. Now remove the vessel very carefully from the water-bath, and pour on top of the hot honey, very gently, a sufficient amount of cold water to fill the vessel completely. This will cause all the impurities floating on the honey at once to rise to the top of the cold water, where they will often solidify to a tough skin or cake, which may be taken off without difficulty. Then pour off the water through the lip, remove the last remnants, if necessary, by means of blotting paper, and filter the honey through a piece of well-washed, wetted, and dense white flannel. The resulting product—if the honey was pure—will be very nice and brilliant.

No. 683.—**The Dose of Elaterium and Elaterin** (Dr. J. M.).

Elaterium has of late years greatly deteriorated in activity, most of that in the market requiring to be given in double the dose (and even in still larger amounts) than used to be the case formerly. We have ourselves made inquiries, both in England, on the Continent, and in Malta, as to the best sources of first-class elaterium, but the samples which came under our observation were not at all satisfactory. Occasionally a very good lot makes its appearance, and this is almost a disadvantage at present, because many physicians have acquired the habit of prescribing quite large doses of elaterium, and, if by mere chance the sample happens to be a very good one, the results are unexpectedly severe. Clutterbuck's Elaterium used to be very good and uniform, and its average dose was usually stated at $\frac{1}{4}$ grain. But there is no such thing now as "Clutterbuck's" elaterium; for the British firm which claims to use his process does not succeed in obtaining as satisfactory a product. Prof. Flückiger states that elaterium, carefully prepared by Allen & Hanburys, of London, contained 33.6 per cent of elaterin; the best Maltese variety contained 27.6 per cent. But these figures are unusually high, and do not represent the average samples in the market. Hager (*Pharm. Prax.*, I., 1014) says of White, or English Elaterium: "Under this name, about 50 years ago, the sun-dried sediment deposited from the juice and sap of the elaterium fruit was introduced into the market, either in form of amorphous, light, greenish-white pieces, of a granular fracture, or in form of curved concavo-convex pieces, about 2 mm. thick. It was found to be of varying effect, and was afterwards neglected" [on the Continent]. He further describes the following:

"*Extractum Elaterii;* Elaterium nigrum; Elaterium." The fresh fruits are bruised, and the expressed juice, after straining through a hair-sieve, is evaporated on a water-bath to a thick extract. The yield is about 1.5 per cent. This is in form of a greenish-brown, very bitter extract, turbidly soluble in water. It contains 15 to 20 per cent elaterin."

The adult dose of *elaterium* (such as we are in the habit

of using at the present day) is about ¼ grain. This is the average full dose, when the full effect is desired. Every fresh lot of elaterium should be tested by itself, and in the beginning the dose should be somewhat smaller. But we have seen 1 and even 2 and 3 grains of some lots produce scarcely any effects.

The adult dose of *elaterin* is about $\frac{1}{12}$ grain; less will often answer, and the dose should be increased with caution.

The concluding words of the article "Elaterium" in the *National Dispensatory* are apt to lead to mistakes. Stillé who first speaks of the dose of elaterium, recommends to begin with with $\frac{1}{12}$ grain. At the end he says: "Elaterin is more active in solution with alcohol. *The dose* is the *same as that of elaterium*." We differ from him in this. If this refers to the dose given for elaterium ($\frac{1}{16}$ gr.), it is right enough. But persons who consult the work, often merely glance at the place where the dose of a substance is mentioned, without reading the whole article. Hence, it may happen that somebody, accustomed to large doses of elaterium, will give equally large doses of elaterin. We think that the wording of the passage in question should be altered.

By the way it may be added that elaterin is *inert* if administered endermically or hypodermically.

No. 684.—**Boracic Acid in Ointments.**—Prescriptions containing *boracic acid*—the use of which, as an antiseptic, has lately been revived—in combination with vaseline, simple cerate, or lard, are frequently handed over the prescription counters at present, The incorporation of the boracic acid with the ointment has heretofore been somewhat tedious, owing to the difficulty in reducing it to an impalpable powder. One of our friends informs us that this may be readily accomplished by triturating it with a little ether, using about ½ fl. oz. of the latter for every ounce of the acid. In this way, the resulting ointments will be as homogeneous and smooth as cream.

**Liquefied Sulphuretted Hydrogen.**—Prof. A. R. LEEDS, in a recent letter addressed to us, makes some remarks on sulphuretted hydrogen, which we hope will meet with attention from manufacturers. He says:

I would like to ask whether some of the manufacturers of chemicals might not be induced to make liquefied sulphuretted hydrogen for laboratory use. The pressure required for its liquefaction is not very great, and on a commercial scale the gas might be manufactured very cheaply. The care of sulphuretted hydrogen apparatus is one of the most disagreeable parts of laboratory work, especially where large numbers of students are concerned, and suitable arrangements in connection with reservoirs of the liquefied gas would be a great boon to working chemists.

**Correction.**—In the Report of the Conversational Meeting of the College of Pharmacy of the City of New York, printed in our last number, it is stated that several Mexican drugs had been received by the College, one of which was labelled *Amyris Parke-Davisiana*. As we had never heard of such a plant, we queried it. We are now informed that the name was applied to the species by a well-meaning person in Mexico, whose knowledge of botany is not very extensive, and whose selection of this species name is unauthorized, and, of course, to be rejected.

**Postage Stamp Mucilage.**—The mixture used on the U. S. postage stamps is stated to be as follows: 2 parts of dextrin are dissolved in 1 part of acetic acid and 5 parts of water on a water-bath, and after solution, 1 part of alcohol is added.

In Germany, only gum arabic is used for postage stamps. According to the *Droguisten Zeitung*, the amount daily consumed by the Imperial Post Office Department is said to be 100 pounds.

## NOVELTIES.

MESSRS. SEABURY & JOHNSON have sent us as sample of **Water Proof Tissue** recently made by them at the suggestion of Dr. W. W. Keen, of Philadelphia, in which the water-proofing material is principally composed of paraffin and india-rubber. Dr. Keen has subjected this paper to severe tests in comparison with oiled silk, oiled muslin, taffeta oiled silk, paraffin paper, waxed paper, and gutta-percha tissue, and none of the latter were able to bear all the tests through which the new material passed. Dr. Keen claims for it (1) its impermeability by water after an exposure of at least seventy-two hours, and even after being repeatedly crushed and crumpled in the hand; (2) that it is impermable to air, even when bruised; (3) it does not absorb water or discharges; (4) it may be used with the hottest dressings which can be borne; (5) although very flexible, it is strong enough for ordinary wear; (6) its cost is many times less than that of similar dressing.

The *Boston Medical and Surgical Journal*, in giving the above résumé of its advantages, recommends it as a substitute for the Mackintosh cloth employed in Lister's dressings, and says that attempts are being made to produce a heavier paper, which shall serve instead of rubber blankets, to protect beds in which cases of labor, typhoid fever, etc., are confined. The cost is $4.00 per roll of 100 yards.

MR. CLAY W. HOLMES, of Elmira, N. Y., is the manufacturer of a preparation called **"Fragrant Frostilia"** which he recommends for the relief of frost-bite, chapped skin, sore lips, sun-burn, roughening of the skin by wind, etc. It is liquid, bland, free from greasy or sticky properties, and has an agreeable though slight odor. We are not aware of its nature, although we are assured that its ingredients are harmless. Its efficiency is guaranteed, but we shall need colder weather than has come yet to put it to a test this winter. McKesson & Robbins are the New York agents.

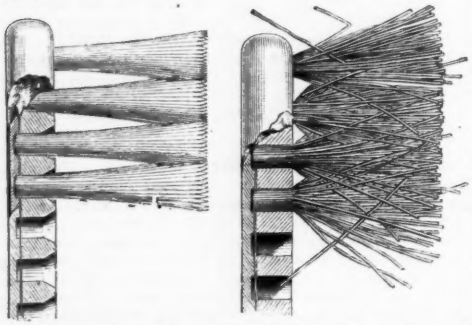
**Rince-Bouche** is the name of a new mouth-wash manufactured by COLGATE & CO., the well-known manufacturers of cosmetics and perfumes, in this city. It is a port-wine-colored fluid, fragrant in odor and slightly pungent in taste, having an acid reaction and being free from sediment. It is intended to be used in water, either with a brush or as a wash, and not only imparts a pleasant odor to the breath, but it also leaves a fresh and agreeable sensation in the mouth. Not unfrequently invalids, who suffer with acute diseases, have such a disagreeable taste in consequence of an unnatural condition of the secretions of this cavity and of the stomach, that even the thought of eating creates a disgust for food, while that which is taken fails to make a natural impression upon the taste-bulbs, owing, it may be, to the presence of viscid and ill-tasting mucus. In such cases the employment of a wash of this character may not only remove a very serious cause of annoyance, but it may also enable the invalid to take, with some degree of appetite, the food essential to his recovery.

**Theioroma** or **Fumigating Wafers,** made by the same firm, are also intended as a means for ameliorating the condition of an invalid. While nothing can take the place of a supply of pure air, either as a disinfectant or deodorant, there are, at times, odors in the sick-chamber which may be of short continuance and which may be masked by the presence of other and more agreeable odors. For such occasions such wafers as these are nicely adapted. An oblong tin-box contains a supply of squares made of porous paper impregnated with nitre and some aromatic compound. In the top of the box is ingeniously formed a small slit, into which a corner of a wafer may be inserted so as to hold it upright during combustion.

**Ambrosial Perfume for the Bath** is another of COLGATE & Co.'s novelties. Few persons, who have not been in the habit of adding a little cologne or similar aromatic fluid to the water used for bathing the face and hands, know what an agreeable addition it is. In warm weather especially, or when the face is flushed with excitement or muscular exertion, it is particularly grateful. It may also be mentioned that it is far better to have a perfume and soap in separate forms, since it avoids the use of a soap in which impure and rancid fats are disguised with pleasant odors. Those persons, therefore, who have a fancy for using castile soap for toilet purposes, and who wish to avoid any trace of soapy odor due to imperfect rinsing, will find in this article an agreeable adjuvant to their bath.

**Cosmetic Glycerin Lotion** is a third of COLGATE & Co.'s new articles of this nature. It is particularly recommended for the relief of the irritation caused by shaving, and to cure the erythema produced by exposure to the sun and wind. There are commonly abundant opportunities for testing its value in March, when eastern winds are usually raw and irritating.

**An Improved Tooth-Brush**, samples of which are sent us by C. W. MAY, FEINHABER & Co., has features worthy of attention. The holes for insertion of the bristles, instead of being left with a sharp edge, which cut them, have been countersunk for a short distance, so that the bristles, when bent over while being used, do not make so sharp an angle. This widening of the holes at their orifice also allows more bristles to be drawn in at each opening than could well be done by the old method. The differences in the two are illustrated in the adjoining figures.



Many persons suffer annoyance from the wedging of loose bristles between their teeth, and anything in the construction of a tooth-brush which will help to avoid this will be well appreciated.

**Burwell's Sanitary Soap, Deodorizer and Disinfectant.** It has, for some time, been the custom in business offices, hotels, and depots, where urinals are in use by a number of persons, in order to prevent the deposition of urates and phosphates on the surface and in the discharge pipes of the basin, to throw the partly consumed pieces of soap from the wash-stand into the strainer. Its alkaline nature effects this purpose, and preserves the apparatus in a more sightly and healthy condition than it would otherwise present. To do this more effectually, Mr. GEO. BURWELL, of Boston, has ingeniously provided a tin-box with perforated walls, cylindrical in form, and with rounded ends, into which has been firmly secured a cake of carbolated, strong soap having, also, chloride of zinc and camphor as ingredients. The label surrounding the box is to be detached and the box then placed in the urinal; another one taking its place when the contents of the first is exhausted.

A dozen of these boxes are packed in a manner which adapts them for counter-display. Their use will undoubtedly improve the healthfulness of many receptacles that would otherwise be extremely offensive.

## PRESCRIPTIONS AND FORMULÆ.

*We shall be obliged if our readers, who make use of these formulæ, will inform us of their experience with them, and note any errors or modifications worthy of attention.*

**Tincture of Podophyllin.**—MESSRS. YOUNG and POSTANS of London, in a communication sent to the *Pharmac. Journal*, state that tincture of podophyllin is now odered a good deal, and recommend the adoption of the following formula:

| | |
|---|---|
| Podophyllin (Resin of Podophyllum), | gr. 1. |
| Alcohol | fl. ʒ 1. |

M. Fifteen minims will therefore represent ¼ grain of the resin, and this when taken on lump sugar is quite a nice dose.

**Application to Painful Sores.**—ARCHAMBAULT recommends the following mixture as a soothing application to painful sores of any kind, particularly in children:

| | |
|---|---|
| ℞ Mucilag. Cydoniæ | 15 gm. |
| Extracti Krameriæ | 25 gm. |

Mix.

**Coloring for Wax.**—

| | |
|---|---|
| Alkanet Root | ʒ 2 |
| Oil of Turpentine | fl. ʒ 16 |

Macerate 2 or 3 days with occasional agitation, and filter through tow.

Melt the wax, which is to be colored, in the colored turpentine.

Or: Suspend a muslin bag containing alkanet in the melted wax until the proper tint is produced.—*Pharm. Journ.*

**Powder for Sweaty Feet.**—

| | |
|---|---|
| Salicylic acid | 25 parts. |
| Alum, powd | 50 " |
| Potato flour | 200 " |
| Oil of bergamot | 10 " |
| Alcohol | 50 " |
| Talc, powd | 700 " |

**London Chlorodyne.**—PROFESSOR STARLING LORING, M.D., of Columbus, Ohio, gives the following, with the remark that he has every reason to believe that it gives the correct composition of this favorite nostrum:—

| | |
|---|---|
| Sulphate of morphia | 16 grains. |
| Extract of Cannabis indica | 32 grains. |
| Chloroform | 2½ fluid drachms. |
| Oil of peppermint | 48 drops. |
| Oil of capsicum (oleo-resin ?) | 16 drops. |
| Simple syrup, to make | 8 fluid ounces. |

Mix. The bottle is to be shaken occasionally.

**Lark Food.**—The following are some foods suitable for soft billed birds, such as larks:

| | Parts. |
|---|---|
| Hemp Seed | 3 |
| Zwieback (toasted wheat bread) | 2 |
| Maw-seed | 1 |
| Ox-heart | 1 |

Boil the ox-heart well in water, then cut it small, and dry it in an oven till perfectly crisp. All the ingredients must then be thoroughly mixed and ground to a coarse powder in a mill. This food is sold by apothecaries in the United States, for mocking birds, larks, and others.

Bechstein, a celebrated German ornithologist of the past generation, recommends the following pastes, both of which soon become sour, but the formula can be easily modified so that the food could be sold in powder.

No. 1. Take a stale well-baked white loaf, soak it thoroughly in fresh water, squeeze out the water, and pour boiled milk over it, adding about two-thirds of well sifted barley or wheat meal.

No. 2. Grate a carrot very finely, soak a small white loaf in water, squeeze it out, and put it with the carrot in an earthen pan, add two handfuls of barley or wheat meal, and mix thoroughly.

"The first paste," says Bechstein, "agrees so well with all my birds, that they are always healthy and preserve their feathers, so that they have no appearance of being prisoners. Sometimes, as a delicacy, they are given ants' eggs, or a few meal worms."

Mr. Sweet recommends the following: Hemp seed crushed very small, in boiling water, is mixed thoroughly with an equal quantity of bread soaked and squeezed dry, and an equal quantity of lean raw meat minced fine. Another authority says that, for the lark, barley meal, with cabbage, chopped cress and poppy-seed, mixed with bread crumbs, or in winter with oats, forms a good food.—*Chemist and Druggist.*

**Treatment of Cracked Nipples.**—Dr. Haussmann treats cracked nipples by applying lint soaked in a two-per-cent solution of carbolic acid. The wet lint should be applied every two or three hours. The treatment gives instant relief from pain, and although the child continues to use the nipples, cure is established within three days.

**Recipe for Making Boots Waterproof.**—Linseed oil, 1 part; mutton tallow, ½ lb.; beeswax, ½ lb.; melt and mix thoroughly together, and apply to the warm, dry leather with a brush. A small quantity of ivory black is sometimes added to this mixture.—*Scien. Amer.*

**Balsamum Salicylico-Benzoinatum** (*Benzoin Balsam*).—The following compound is a good and cheap substitute for balsam of Peru, which it greatly resembles, and is particularly useful in veterinary practice. Small wounds and excoriations coated with it will generally heal, after one application, in a few days.

| | | |
|---|---|---|
| Benzoin (Siam), in coarse powder | 100 | parts. |
| Pitch (black) | 15 | " |
| Salicylic acid | 10 | " |
| Gurjun balsam | 40 | " |
| Absolute alcohol | 500 | " |

Digest, with occasional agitation, during several hours; then set it aside until the undissolved matters subside. Decant the supernatant liquid, strain, remove most of the alcohol by distillation from the water-bath, cool the residue, and (if necessary) add to it again a sufficient quantity of absolute alcohol to make the product of the consistence of thin syrup.—*Pharm. Centralh.*

**Canton Soy.**—

| | | |
|---|---|---|
| Extract of malt | 1 | gallon. |
| Molasses | 5 | pounds. |
| Salt | 4 | " |
| Mushroom juice | 2 | pints. |

Mix with a gentle heat, and stir until the union is complete. In a fortnight decant the clear portion.—*Canad. Pharm. Journ.*

[To judge by the ingredients which enter into the composition of the foregoing formula, it would seem hardly proper to call it "Canton" soy, since, according to REDWOOD, the soy made in China has the seeds of *Dolichos Soja* as its ingredient. The latter authority gives the following formula:

*Soy.*

Boil 4 lbs. of the seeds of *Dolichos Soja* with water until they become soft, then add 4 lbs. of bruised wheat. Keep the mixture in a warm place for 24 hours, then add 4 lbs. of common salt and 8 lbs. of water; put the mixture into a stone jar and cork it up for 2 or 3 months, then press out the liquor.

This would seem to be quite another thing from the formula first given.—ED.]

# ITEMS.

**College of Pharmacy of the City of New York.**—The regular quarterly meeting of this College was held on January 15th, at the College building. After the transaction of the ordinary routine business, the committee on joining the University of the State of New York, reported that in their opinion it would be advantageous to the College to place itself under the supervision of the University of the State of New York, as one of the institutions subject to the visitation of the Regents of the University. While this act will not interfere with the independence of the College as a corporate institution, it will guarantee its standing in a much more effectual way than could be done by its uncontrolled and independent existence. On motion the report was adopted, and resolutions were passed to place the College under the supervision of the University.

The Board of Trustees recommended the names of the following gentlemen for election as Corresponding Members, this being the first election of such under the amended by-laws: Messrs. Federico Prats Grau, of Barcelena, Spain; E. Schering, of Berlin, Germany; C. Anneessens, of Antwerp, Belgium; Ed. Rennard, of St. Petersburg, Russia; Dr. Wallace Taylor, of Osaka, Japan; Jas. G. Steele, of San Francisco, Cal.; J. U. Lloyd, of Cincinnati, Ohio.

After the adjournment of the quarterly meeting, the members assembled for discussing professional and scientific questions, the report of which we shall have to omit for the present, for want of time.

**Literary and Scientific Society of the German Apothecaries of New York.**—The annual meeting of this Society was held on Thursday evening, Jan. 8th, 1880, and was attended by a large number of the members. After the usual routine business had been transacted, the election for officers was held, with the following results: *President:* Gustav Pfingsten. *1st Vice-Pres.:* Hugo Schmelz, Ph.D. *2d Vice Pres.:* R. van der Emde. *Record. Secretary:* Ludwig G. W. Ruprecht. *Corresponding Secretary:* Carl Eimer. *Treasurer:* Theodore Louis. *Archivist:* Francis F. Zitz. *Librarian:* Paul Balluff. *Executive Committee:* Conrad Ihlefeld, F. P. Lehlbach, E. Götting. *Scientific Committee:* Dr. F. Hoffman, Adolph Tscheppe, Dr. H. Schmelz, Dr. Jacubowsky, F. P. Lehlbach. *Delegates to the American Pharm. Assoc.:* P. Balluff, G. Ramsperger, Dr. F. Hoffmann, A. Tscheppe, Dr. H. J. Menninger. *Committte on Entertainments:* R. van der Emde, Dr. W. Mettenheimer, E. Götting, R. Zahn, E. Fiddeke. *Business Committee:* C. Ihlefeld, A. Bischoff, Carl Schur.

The Society numbers at present 120 members, and is constantly enlarging the sphere of its usefulness. It possesses a small but well selected library. The members are divided, according to their location, into 5 circuits, within each of which a number of different scientific journals are circulated in a systematic manner. The total number of copies of journals is 30. During the past year the total number of single numbers carried around by the messenger of the society amounted to 1,260. A new (sixth) circuit is about to be established.

The variety of talent and specialties represented by the different members—some being specially well posted in chemistry, or botany, or physics, etc., etc.—make the scientific discussions highly instructive and interesting. Not less attractive are the social reunions of the society, which are always looked forward to, particularly by the ladies, with great anticipations.

The treasurer reports the receipts at $771.00, and the expenditures at $688.96.

L. G. W. RUPRECHT,
*Recording Secretary.*

**Codman & Shurtleff,** of Boston, call attention to the fact that a man named M. Picker, M.D., travelling

in the South, claims to represent this firm, but has no authority whatever for doing so.

**Proposed Changes in the Tariff.**—The following measures were under consideration by the Assembly Committee on Ways and Means on the adjournment of Congress during the holidays:

House Resolution No. 157.—To amend title 33, section 2,504 of the revised statutes. (To take mineral waters from the free-list.)

House Resolution No. 1,387.—Fixing a duty on crude India-rubber.

House Resolution No. 1,674.—To repeal so much of section 3,437 of the Revised Statutes as imposes a tax on medicines or medicinal preparations.

House Resolution No. 2,493.—To amend section 2,505 of the Revised Statutes. (To add to free list, books, etc., for hospitals having a medical library.)

House Resolution No. 2,596.—To admit, free of custom duties, cinchona or Peruvian bark, together with all the alkaloids and preparations of said bark.

House Resolution No. 2,725.—To amend the existing custom duties, and for other purposes (changing the duty on borax.)

House Resolution No. 2,895.—To admit, free of duty, chemical medicinal preparations, medicines, barytes, and bichromate of potash.

**Wafer-Capsules.**—We learn from the *Pharmaceutische Centralhalle* (1879, No. 47. p. 440), that Limousin of Paris has been compelled to pay damages to Digné for infringement of his patent of wafer-capsule apparatus.

**Jean Baptiste Alphonse Chevallier,** born at Langres (Haute-Marne) in 1793, died at Paris on November 30th, 1879. He was for many years one of the professors at the Ecole de Pharmacie of Paris, and one of its foremost ornaments. Of his many works the most important is the *Dictionnaire des Altérations et Falsifications des Substances alimentaires, médicinales et commerciales*, which is the most complete work on the subject in the French language.

**Uranium in California.**—A dispatch from Fairplay reports the discovery of uranium in the Sacramento mining district. This mineral is found in Bohemia, but has never before been discovered in this country, as far as known. The present discovery was made by H. L. Rice. The ore runs 60 per cent. Uranium is worth $1,000 per ton. One of its principal uses is as a coloring substance in the manufacture of glass.—*Scient. Amer.*

**Consumption of Champagne.**—The *Droguisten Zeitung* gives the following round figures, as representing the present yearly consumption of champagne in different countries.

Africa, 100,000; Spain, 300,000; Belgium, 500,000; Italy, 500,000; Holland, 600,000; Germany, 1,500,000; Russia, 2,000,000; France, 2,500,000; England, 5,000,000; and North America, 10,000,000 bottles.

**Quinia Sales in St. Louis.**—A leading wholesale drug house in St. Louis sold in 1878, for two months in the fall, quinine at the rate of a thousand ounces a day. This year their sales at the same time did not average over one hundred ounces a day. Such has been the decrease of malarial diseases the past autumn.—The increasing demand for the cheaper cinchona-alkaloids may probably have been another cause for the falling off in demand.—ED. N. R.

**Lavender and Peppermint Crop in England.**—According to Dr. Septimus Piesse, in a letter to the *Times*, the produce of the lavender and peppermint farms at Mitcham, Merton, and Carshalton in Surrey, and at Hitchen, in Hertfordshire, has fallen this year 40 per per cent below a seven years' average, and since August, 1876, the crops have suffered from want of sun-light and temperature. A rise in the price of the oils of these plants may, therefore, be expected.—*Pharm. Jour. and Trans.*

**Molecular Arithmetic.**—According to Mr. Johnstone Stoney (*Phil. Mag.*, Vol. 36, p. 141), 1 cubic-centimetre of air contains about 1000,000000,000000,000000 molecules. Therefore a bulb* 13.5 centimetres diameter contains $13.5^3 + 0.5236 + 1000,000000,000000,000000$, or 1,288252,350000,000000,000000 molecules of air at the ordinary pressure. Therefore, the bulb when exhausted to the millionth of an atmosphere, contains 1,288252,350000,000000 molecules, leaving 1,288251,061747,650000,000000 molecules, to enter through the perforation. At the rate of 100,000000 molecules a second, the time required for them all to enter will be:

12882,510617,476500 seconds, or
214,708510,291275 minutes, or
3,578475,171521 hours, or
149103,132147 days, or
408,501731 years.

**Announcement of a New Work.** A certain Dr. O. Hahn is announced to be the author of a work shortly to be issued, which has the following remarkable title: "Die Urzelle; nebst dem Beweis, dass Granit, Gneiss, Serpentin, Talk, gewisse Sandsteine, auch Basalt, endlich Meteorsteine und Meteoreisen aus—Planzen—bestehen. Die Entwicklungslehre durch Thatsachen neu begründet." This is in English: "The Primitive Cell; together with the proof that granite, gneiss, serpentine, talc, certain sandstones, also basalt, meteoric stones and meteoric iron, consist of *plants*. The doctrine of development newly verified by facts." The author, who has for many years been occupied with the microscopic examination of minerals, has discovered plants (Eophyllum) in the Canadian Laurentian rocks, which had hitherto been supposed to contain, if any organized matter at all, only the so-called Eozoon. Although the organic nature of the latter (which was first discovered by Logan in 1863) is not admitted now by prominent geologists, yet the author above named appears to bring new proofs, and even promises to show the vegetable origin of those rocks. Nothing is impossible; but we would require extraordinarily strong proofs before we would be willing to be convinced of the correctness of the author's statements.

## PHARMACEUTICAL CALENDAR.—February.

*N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.*

| Date. | Society Meetings. |
|---|---|
| 3d, Tues. | Phila. Coll. Ph.—Trust. Meet. |
| 4th, Wed. | Connect. Pharm. Assoc.—Meets at New Haven. |
| 5th, Thur. | Phila. Coll. Ph.—Alumni Meet. |
| | Mass. C. Ph.—Trustees' Meet. |
| | New York Coll. Ph.—Trustees' Meet. |
| | Louisville C. Ph.—Pharm. Meet. |
| 10th, Tues. | Kings' Co. Pharm. Soc.—Annual Meet. |
| | St. Louis Coll. Ph.—Pharm. Meet. |
| | National Coll. Ph.—Trustees' Meet. |
| | Massach. Coll. Ph.—Pharm. Meet. |
| 11th, Wed. | Cincin. Coll. Ph.—Pharm. Meet. |
| 12th, Thur. | Newark Pharm. Assoc.—Mo' Meet. |
| | N. Y. Germ. Apoth. Soc.—Mo' Meet. |
| | Louisville C. Ph.—Directors' Meet. |
| | Maryland C. Ph.—Mo' Meet. |
| 17th, Tues. | St. Louis C. Ph.—Trustees' and Alumni M. |
| | Philad. Coll. Ph.—Pharm. Meet. |
| 19th, Thur. | N. Y. Coll. Ph.—Pharm. Meet. |

*The above note is attached to a report of a lecture on Radiant Matter by Wm. Crookes, reprinted in *Pharm. Journ.*, Nov. 1st. The bulb referred to above formed a portion of the apparatus used by the lecturer.